

A COMPARATIVE STUDY OF SCHOOL-BASED INTERVENTIONS FOR STUDENTS
WITH EMOTIONAL DISABILITIES, SPECIFIC LEARNING DISABILITIES, AND
OTHER HEALTH IMPAIRMENTS

Shannon M. Lewis

A dissertation submitted to the faculty of the University of North Carolina at Chapel Hill in
partial fulfillment of the requirements for the degree of Doctor of Philosophy in the School of
Education (School Psychology)

Chapel Hill

2013

Approved by:

Chair: Rune J. Simeonsson

Advisor: Barbara H. Wasik

Advisor: Melissa Miller

Advisor: Anita Scarborough

Reader: Sandra Evarrs

© 2013
Shannon M. Lewis
ALL RIGHTS RESERVED

ABSTRACT

SHANNON LEWIS: A comparative study of school-based interventions for students with emotional disabilities, specific learning disabilities, and other health impairments.
(Under the direction of Rune J. Simeonsson, Ph.D.)

The purpose of special education is to provide students with effective interventions in order to ensure they perform up to their potential while enrolled in school and are prepared upon exiting school. The current study aimed to examine and compare school-based interventions, and the behavioral and psychological functioning of students with emotional disabilities (ED), specific learning disabilities (SLD), and other health impairments (OHI) category. Using secondary summary data on students served under the ED, SLD, and OHI categories from the National Longitudinal Transition Study-2 (NLTS2), this study used multiple significance tests to examine differences in interventions and functioning among students served under the three special education categories. The results indicated that students in the ED and OHI categories received significantly more behavioral interventions than their peers with SLD; students with ED received significantly more mental health interventions than their peers in the SLD and OHI categories; and students with ED, SLD, and OHI received similar rates of academic interventions. Findings also indicated that students with ED and OHI share similar behavioral profiles. Further research is needed to determine whether distinct behavioral profiles exist among students with ADHD served under the ED category and students with ADHD served under OHI.

ACKNOWLEDGMENTS

First and foremost, I give honor and thanks to Jesus, my Lord and Savior, for the faith, strength, and wisdom He has provided me throughout the completion of this project. While completing my dissertation, He has truly shown me that His grace and strength is sufficient (2 Corinthians 12:9).

I am very grateful for the direction and insight my chair, Dr. Rune Simeonsson, has provided me throughout my graduate school career and my dissertation. He has always been a source of encouragement and allowed me to explore my own interests while in the program. He continues to push beyond the limits of Peabody Hall and provide opportunities for graduate students to literally explore the world! I hope that one day I will be able to impact lives the way he has and continues to. Also, I am thankful for my dissertation committee. Thank you for your knowledge and advise throughout the completion of my project.

I am incredibly grateful for my family, Dad, Mom, Josh, and Bani, who has always been a source of motivation in pursuing my education in school psychology. Although I could not understand it at the time, I truly am fortunate to have been thrown into the “deep end” because it taught me to swim and grow strong quickly. Without those experiences, I know I would not be who I am and where I am today. Thank you! I am also grateful for all of my extended and adopted family. Thank you Uncle Richard and Aunt Rhonda for always providing me with love, a bed to sleep on, and food in my belly. Graduate school would not have been the same without you. Thank you to my adopted mom, Ms. Debra, for always

praying for me, pushing me, and showing me what a strong, wise, woman of God looks like. Last but certainly not least, thank you Keith, my love, for always telling me “you can do it,” “I’m so proud of you, baby,” and for praying for me and with me. Even though it may have seemed like I did not want to hear it at the time, those words of encouragement mean the world to me because they have gotten me to this point. I also thank you for being so understanding when dissertation took up a huge chunk of my time.

Thank you to both of my church families, Celebration AG and Emerge Church, for always praying for me and bringing so much joy to my life throughout graduate school and my dissertation. Thank you to all of my friends, prayer partners, accountability partners, and fellow interns for always telling me to “get to work,” but also making sure I was taking care of myself. Also, I am thankful for my internship supervisors, who were incredibly understanding throughout this process. Lastly, I would like to thank the Linnea Smith Scholarship for providing me with funding during my dissertation year.

TABLE OF CONTENTS

LIST OF TABLES	viii
ABBREVIATIONS	ix
Chapter	
I. INTRODUCTION	1
II. LITERATURE REVIEW	4
Functional characteristics of students with emotional disturbances	4
Functional characteristics of students with specific learning disabilities	9
Functional characteristics of students with other health impairments	12
Comparing ED, SLD, and OHI	15
Behavior Interventions	16
Academic Interventions	25
Mental Health Interventions	35
Rationale	41
III. METHODS	44
Participants	44
Instruments	48
Variables	49
Analytic Procedure	50
IV. RESULTS	53

Research Question 1	53
Research Question 2	54
Research Question 3	55
Research Question 4	56
V. DISCUSSION	59
Explanation of findings.....	60
Limitations	66
Implications and Future Directions.....	68
Appendices.....	76
References.....	84

LIST OF TABLES

Table

1.	Student characteristics	46
2.	Behavior intervention services.....	54
3.	Academic intervention services	55
4.	Mental health intervention services	56
5.	Special education teacher's report of student functioning.....	57
6.	General education teacher's report of student functioning	58
7.	Student self-report of functioning.....	58

ABBREVIATIONS

ADHD	Attention Deficit Hyperactivity Disorder
CBT	Cognitive Behavioral Therapy
ED	Emotional Disability
IDEIA	Individuals with Disabilities Education Improvement Act of 2004
OHI	Other Health Impairment
SLD	Specific Learning Disability

CHAPTER 1

INTRODUCTION

School-age children with disabilities receive special education services under Part B of the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA, 2004, Pub. L. No. 108-446, 118 Stat. 2647). The primary purpose of IDEIA is to ensure (1) all children with disabilities are provided with a free and appropriate public education with special services; (2) children's and parent's rights are protected; (3) educators and parents have the tools they need to best support the education of children with disabilities, and; (4) efforts to educate children with disabilities are effective (IDEIA, 2004, Pub. L. No. 108-446, § 602, 118 Stat. 2647). Students are eligible for special education if they have a disability defined by meeting criteria for one of the following fourteen categories: autism (AU), deaf-blindness, deafness, developmental delay (DD; children ages 3-9), emotional disturbance (ED), hearing impairment (HI), intellectual disability (ID), multiple disabilities (MD), orthopedic impairment (OI), other health impairment (OHI), specific learning disability (SLD), speech or language impairment (SLI), traumatic brain injury (TBI), or visual impairment (VI), including blindness. From 2008-2009 approximately 13.2 percent of students received special education services (U.S. Department of Education, 2011).

Students in special education are not exempt from the same requirements general education students must fulfill under the Reauthorization of the Elementary and Secondary Education Act (ESEA, 2011), formally known as the No Child Left Behind Act of 2001 (No

Child Left Behind [NCLB], 2002). Under ESEA, students in special education are mandated to complete annual assessments and are expected to make yearly progress (Browder and Cooper-Duffy, 2003). To ensure students in special education satisfy their educational requirements and goals, conducting an assessment of their overall functioning and providing appropriate interventions are necessary.

Undeniably, academic interventions are a pertinent part of special education students' academic program, as their disabilities significantly impact their academic performance and functioning. However, functioning and interventions related to behavioral and mental health are equally important, as students in special education have been known to experience more behavioral difficulties, lower self-esteem and confidence, experience less peer acceptance, and feel lonelier compared to their general education peers (Daniel and King, 1997; Valas, 1999). Rather than examining students based on special education categories, arguably, it is more important to understand a student's strengths and weaknesses in their academic, behavioral, and mental health functioning as a means of informing their school-based interventions (Simeonsson, 2009). The ED, SLD, and OHI groups are distinct categories under IDEIA 2004; however, students identified under the three categories often share similar academic and behavioral concerns (Bradley et al., 2008; Forness & Kavale, 2001; Kortering, 2009; Kortering & Christenson, 2009; Schnoes, Reid, Wagner, & Marder, 2006), making them ideal groups to compare and contrast with regard to functioning and interventions.

This study compares school-based academic, behavioral, and mental health services, and the functioning of students in the ED, OHI, and SLD categories. To this end, an overview is made of the eligibility requirements for ED, OHI, and SLD. A review of the

literature describes common issues faced by children and adolescents served under ED, OHI, and SLD categories, and compares and contrasts the interventions often provided to students identified with an ED, OHI, and SLD. The literature review concludes with the rationale for the present study and proposed research questions. Lastly, the methodology to answer the research questions, study results, and discussion are presented.

CHAPTER 2

LITERATURE REVIEW

In this section, an overview of the characteristics of students served under ED, OHI, and SLD is provided, as well as the prevalent issues facing these three populations. Next, interventions targeting the academics, behaviors, and mental health of students identified with an ED, OHI, and SLD are discussed. Concluding this section is the rationale for the proposed study and the research questions.

Functional Characteristics of Students with Emotional Disturbances

Emotional disturbance (ED) is an eligibility category under the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA). During the 2008-2009 school year, approximately 0.9 percent of students out of the total population and 6.5 % of special education students received services under the ED category (U.S. Department of Education, 2011). A variety of different terms are used to define this category, with individual states developing the disability definition with guidance from IDEIA 2004. For example, these terms include, Serious Emotional Disability, Serious Emotional Disturbance, Emotional Disability, Behavioral Disability, or Emotional/Behavioral Disability, which is considered a more global term to describe students who fall into the special education category. The federal definition of ED is as follows:

Emotional disturbance means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance:

(a) An inability to make educational progress that cannot be explained by intellectual,

sensory, or health factors.

(b) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers;

(c) Inappropriate types of behavior or feelings under normal circumstances;

(d) A general pervasive mood of unhappiness or depression;

(e) A tendency to develop physical symptoms or fears associated with personal or school problems.

Emotional disturbance includes schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that he/she is also seriously emotionally disabled (Assistance to States for the Education of Children with Disabilities and Preschool Grants for Children with Disabilities, 2006, pg. 46756).

Several disabilities and disorders in the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition, Text Revision (DSM-IV-TR; APA, 2000) meet the ED eligibility criteria when evidence suggests that a student's disorder significantly impacts their educational performance. DSM-IV-TR disorders can include but are not limited to unipolar depression, bipolar disorder, anxiety disorders, psychosis, and a variety of other psychiatric disorders (Duncan, Forness, Hartsough, 1995; Mattison et al., 1986). Parents often report these characteristics as the disabling conditions and problems their child with ED faces (Wagner, Kutash, Duchnowski, Epstein, and Sumi, 2005).

However, some disorders are not recognized under IDEIA, 2004 in that the ED category does not include students who are identified as socially maladjusted. Ironically, there is no federal or state definition of the term socially maladjusted, leaving states to interpret the meaning of the term on their own. Reference to this term often implies students characterized by purposeful, deviant behavior, such as gang behavior, truancy, and theft (Merrell and Walker, 2004). A consequence of the exclusion is to deny special education services to children who have been diagnosed with conduct disorder and oppositional defiant disorder. The 'socially maladjusted' clause may be viewed as unfortunate because many of these children who exhibit externalizing behaviors have internalizing symptoms unidentified.

In fact, Costenbader and Buntaine (1999) found students with ED and those who are identified as ‘socially maladjusted’ generally do not present with distinct behavioral patterns.

Demographic characteristics, such as race and socio-economic status, are disproportionately represented among students served under the ED category compared to students in other special education categories and the general population. The majority of ED students tend to be male, and African Americans constitute a larger percentage compared to what is represented in the general population and other disability categories (Wagner et al., 2003; Wagner et al., 2005). In contrast, females and Latino students tend to be underrepresented (Reddy, 2001; Wagner et al., 2005). There are significantly higher rates of students with ED living in poverty than students in general education and those with other disabilities (Wagner et al., 2005). Likewise, there are significantly more students with ED being raised by a single parent or living with relatives, and who have a parent unemployed than students with other disabilities and those in general education (Wagner et al., 2003; Wagner et al., 2005). Students with ED more frequently come from households at greater risk for poverty (Wagner et al., 2003).

Students who are identified under ED often encounter more severe academic difficulties compared to children and adolescents being served in other special education categories (Bradley et al., 2008; Wagner and Cameto, 2004). For instance, students served under the ED category often have their disability identified at an age later than students with other disabilities (Wagner et al., 2003; Wagner et al., 2004). Even after they are identified and receiving services, parents more often report that their child served under ED received mostly Ds and Fs compared to students identified with OHI or SLD. This discrepancy exists despite findings showing students with ED, OHI, and SLD have comparable scores on

cognitive assessments (Bradley et al., 2008). Evidence suggests students with ED make fewer gains in reading than those served under SLD (Anderson, Kutash, and Duchnowski, 2001). Suspension and expulsion rates of students with ED in elementary, middle, and high school are higher than for other special education categories (Wagner et al., 2005), even when compared to students served under OHI (Bradley et al., 2008) and SLD (Achilles, McLaughlin, and Croninger, 2007). Compared to students with OHI and SLD, those with ED had lower rates of attending any type of postsecondary education institution (Newman, Wagner, Cameto, and Knokey, 2009) and were more likely to drop out of secondary school (Bradley et al., 2008). Students identified with ED evidence higher rates of employment than attending a postsecondary institution; however, rates of employment for students with ED are still lower than that of students in the SLD and OHI categories (Newman et al., 2009).

Research provides evidence indicating students with ED have deficits in their language and communication skills. In a systematic literature review of 26 studies, Benner, Nelson, and Epstein (2002) found about 70 percent of those identified under the ED category also had expressive, pragmatic, and receptive language difficulties. Further, their review also showed over half of the children identified with language impairments were also identified as students with ED. Parents recognize their children's problems with communication, with about a third describing their children with ED as having difficulty with both understanding what others say and expressing themselves (Wagner et al., 2005).

Students categorized under ED also encounter more behavioral and social difficulties than students in other special education categories. Post-high school, those who received services under the ED category had significantly higher rates of carrying weapons, incarceration, and experience with probation/parole than students in other special education

categories (Newman et al., 2009). Problems of students being served under ED include the highest rates of daily cigarette smoking, alcohol consumption, marijuana, and any other illegal drug use when compared to those from other special education categories (Yu, Huang, and Newman, 2008).

The internalizing behaviors and experiences of children and adolescents in the ED category are equally important. The very nature of the ED definition means there will be some students in the category experiencing internalizing disorders, that is, a general pervasive mood of unhappiness or depression (Cullinan and Sabornie, 2004). The literature suggests students in the ED category who are characterized by more externalizing behaviors also experience internalizing behaviors, such as depression, especially students who are older and in self-contained classrooms (Allen-Meares, 1991). Maag and Behrens (1989a) reported that depression existed in over 20 percent of their ED sample and research also suggests that levels of depression among students under the ED category are higher than that of the general education population (Cullinan & Sabornie, 2004; Cullinan, Schloss, and Epstein, 1987; Stanley, Dai, and Nolan, 1997).

Further, rates of depression in the ED population tend to be similar to the rates in other special education categories, such as SLD (Maag and Behrens, 1989a; Stanley et al., 1997), and females tend to endorse more severe levels of depressive symptoms, especially at the secondary level (Maag and Behrens, 1989a; Maag and Behrens, 1989b). While evidence suggests students in the ED category will endorse depressive symptoms (Allen-Meares, 1991), especially females (Maag and Behrens, 1989b), recent national findings reveal that students identified under the ED category rarely report any feelings of depression (Wagner, Newman, Cameto, Levine, and Marder, 2007), suggesting students with an ED can describe

how they feel but are unable to recognize or verbalize those experiences as sadness or depression.

The difficulties students with ED manifest may be organic in nature, related to social risk, or learned behaviors (Sprague and Walker, 2000). Regardless of etiology, these students encounter difficulties navigating and accessing their education and social systems (Wagner et al., 2006). Therefore, the availability of school-based interventions and services for students with ED is of particular importance.

Functional Characteristics of Students with Specific Learning Disabilities

According the U.S. Department of Education (2011), during the 2008-2009 school year approximately five percent of the student population and 30 percent of special education students received services under the SLD category, making it the largest special education category. Under IDEIA, a Specific Learning Disability (SLD) is defined as:

A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Specific learning disability does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, or mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (Assistance to States for the Education of Children with Disabilities and Preschool Grants for Children with Disabilities, 2006, pg. 46757).

As noted in the definition of SLD, a student can be identified with a learning disability in many domains (i.e. reading, writing, math, speaking), but a deficit in one of these areas cannot be better attributed to a disruption in emotional regulations, such as with ED, economic circumstances, or any other disability. Therefore, a specific learning disability is often conceptualized as unanticipated learning problems that cannot be accounted for by any other circumstance, and seem to be occurring in an otherwise capable student (Lyon,

1996). Similar to students with ED, individuals identified with SLD in schools also may have a DSM-IV-TR diagnosis, such as a Reading Disorder, Mathematics Disorder, Disorder of Written Expression, or Learning Disorder Not Otherwise Specified. However, a student who has one of the DSM-IV-TR diagnoses mentioned above may not qualify for special education services under SLD if there is no impact on their educational performance, as defined by the school.

With regard to academic achievement, as expected, students identified under the SLD category exhibit more academic deficits than their general education peers (Lane, et al., 2006). These academic deficits leave students identified with SLD more at risk for school dropout than their general education peers (Morrison & Cosden, 1997). Additionally, research indicates students with SLD who have graduated from secondary school have lower rates of attending postsecondary education and graduating from a postsecondary institution compared to their peers without a disability (Murray, Goldstein, Nourse, & Edgar, 2000; Fourquarean, Meisgeier, Swank, Williams, 1991). Regarding post-high school employment, students who were identified with SLD in school have higher rates of employment than postsecondary education enrollment, but they are more likely to be employed in lower paying jobs than their general education peers (Fourquarean et al., 1991).

In terms of behavioral characteristics, students identified with SLD typically exhibit lower levels of behavioral difficulties than their peers identified under the ED category (Lane, et al., 2006; however, compared to their general education peers, students with SLD are at a higher risk for behavioral problems (Lyon, 1996; Nowicki, 2003), secondary to their SLD (Lyon, 1996). The behavioral problems can vary depending on the student, but some common behavioral difficulties include attention difficulties, conduct problems, and

withdrawn behavior (McKinney, 1989). Unfortunately, the behavioral difficulties in students with SLD can lead to a greater risk for encounters with the juvenile justice system than their general education peers (Bender & Wall, 1994; Morrison & Cosden, 1997).

While research suggests that students served under the category of SLD exhibit greater levels of social competence than their peers served under ED (Lane, et al., 2006), a meta-analysis conducted by Kavale and Forness (1996) indicated that approximately 75% of students with learning disabilities demonstrated more social skills deficits than their general education peers. According to teacher, peer, and self-reports, common social deficits included less interaction with peers, peer rejection, and lower social status (Kavale & Forness, 1996). Social skill deficits in students with learning disabilities have been widely studied because it has been observed to significantly impact this group's interpersonal relationships and peer acceptance across the lifespan (Bender and Wall, 1994). After leaving secondary school, adults who were previously served under the SLD category reported more social difficulties, having more relationship issues, and feeling most comfortable around others with SLD (Bruck, 1987; Gerber, 2012; Shessel & Reiff, 1999).

With regard to the mental health of students served under the SLD category, research suggests that they are at greater risk than typical peers for depression and anxiety (Huntington & Bender, 1993; Maag & Reid, 2006; Morrison & Cosden, 1997). Students identified with SLD are at a higher risk for reporting low self-efficacy, or confidence (Bender & Wall, 2004; Klassen & Lynch, 2007), even though many teachers perceive their student with SLD as seeming overconfident with their schoolwork (Klassen & Lynch, 2007). In addition to risks of feeling less confident, research suggests that students served under the SLD category also report lower perceived academic competence, report experiencing higher

levels of anxiety and depression, and are at higher risk of suicide than their general education peers (Bender & Wall, 1994).

Functional Characteristics of Students with Other Health Impairments

Under IDEIA the category of Other Health Impairment (OHI) is defined as having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that—

- (a) Is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome; and
- (b) Adversely affects a child's educational performance. (Assistance to States for the Education of Children with Disabilities and Preschool Grants for Children with Disabilities, 2006, pg. 46717).

During the 2008-2009 school year, approximately 1.3% of the total population and 10% of students with disabilities were served under the OHI category (U.S. Department of Education, 2011). As stated above, several health conditions fall under the OHI umbrella. More common medical diagnoses include epilepsy and asthma (Wodrich & Spencer, 2007), but over half of the students who receive services under the OHI category have a diagnosis of Attention-Deficit/Hyperactivity Disorder (ADHD; Forness and Kavale, 2001; Schnoes, Reid, Wagner, and Marder, 2006).

ADHD is a mental disorder (DSM-IV TR) that occurs in approximately 3-7% of school-age children and is defined as a consistent pattern of difficulties with attention, hyperactivity, and/or impulsivity that is more frequent and severe than typically seen in same-aged peers (APA, 2000). This pattern of difficulties must occur in at least two different settings (e.g. home and school), prior to age seven, and with resulting impairment that interferes with developmentally appropriate functioning in these settings.

Currently, there are three types of ADHD defined by DSM-IV TR: ADHD, Predominately Inattentive Type, ADHD Predominately Hyperactive-Impulsive Type, and Combined Type. The following are some features characteristic of each type. According to the DSM-IV-TR, individuals with the predominately inattentive type often make careless mistakes on tasks, fail to give close attention to details, and are distracted by irrelevant stimuli. They often find it difficult to follow through with requests, struggle with organization, and have difficulty completing tasks (APA, 2000). Individuals with the predominately hyperactive-impulsive type often fidget and find it difficult to remain in their seat. Hyperactive behavior manifests in such a way that a person may seem like they are always “on the go” or talking excessively. Individuals with impulsive behavior often appear impatient, frequently interrupt, and blurt out answers before questions have been completed (APA, 2000). Individuals with ADHD, Combined type manifest both the inattentive and hyperactive-impulsive behaviors that are mentioned above (APA, 2000). Because there is no literature specifically focusing on the functioning and interventions for students under the OHI category, literature focusing on the functioning and school-based services for students with ADHD will be presented, as they represent the largest percentage of students being served under OHI.

With regard to racial characteristics, unlike the ED category, research suggests that African Americans are not overrepresented in the ADHD group. In contrast, Hispanic students are underrepresented (Reid, Maag, Vasa, and White, 1994; Schnoes, et al., 2006). Consistent with many special education categories, males are overrepresented in the ADHD category (Schnoes, et al., 2006). Similar to the ED group, when compared to the general

education population, students served under ADHD tend to be from low-income households (Schnoes, et al., 2006).

In terms of academic achievement, students with ADHD who receive special education services often demonstrate poor academic performance across all academic areas during primary and secondary school (Berthiaume, 2006; Bussing, et al., 2012; Loe & Feldman, 2007; Wu & Gau, 2013; Zentall & Ferkis, 1993). In addition, students with ADHD tend to do poorer on standardized tests (Bussing, et al., 2012) and have lower IQ scores than general education students (Loe and Feldman, 2007). Furthermore, students with ADHD often take longer to complete high school, have increased rates of retention, and have decreased rates of postsecondary education compared to their general education peers (Bussing, et al, 2012; Loe and Feldman, 2007). Research suggests that the inattention and executive functioning deficits associated with ADHD are related to experiences with academic problems, not the observed hyperactive/impulsive behaviors (Daley and Birchwood, 2009). In contrast, the hyperactive/impulsive behaviors are prone to result in aggressive behaviors (Gaub & Carlson, 1997; Paternite, Loney, Salisbury, and Whaley, 1999) that result in significantly more suspensions and expulsions than their general education peers (LeFever, Villers, Morrow, and Vaughan, 2002). Unfortunately, many of the externalizing behaviors exhibited by students under ADHD affect post-school experiences, such as higher rates of employment termination (Barkley, et al., 2002).

Though not as severe as students identified under ED, students with ADHD also experience negative social difficulties, especially when compared to their general education peers (DuPaul, 2007; Hoza et al., 2005; Stormon, 2001). For example, Hoza and colleagues (2005) found children with ADHD to be less liked than their other peers. Research suggests

that their disruptive and off-task behaviors are often what lead to the problems experienced with peers (Stormont, 2001). Furthermore, DuPaul (2007) suggests that the negative social experiences for students with ADHD are often a result of (a) not following rules of reciprocal conversation, (b) joining activities abruptly and inappropriately, and (c) problems with aggressive (verbal or physical) behaviors. For some students with ADHD, issues with peer relationships may be related to experiences with depression. Research suggests that children with ADHD and depression tend to have lower self-esteem and more anxiety, especially as it was related to popularity (Bussing, Zima, and Perwien, 2000).

Comparing ED, SLD, and OHI

Although ED, SLD, and OHI are distinct special education categories as described under IDEIA, students served under these three categories share a number of characteristics (Bradley et al., 2008; Forness & Kavale, 2001; Kortering, 2009; Kortering and Christenson, 2009; Schnoes, et al., 2006). For example, studies have found students in both groups experience low academic achievement (Lane, Carter, Pierson, and Glaeser, 2006) and students with SLD and student with an ED have no significant differences in their cognitive abilities (Bradley et al, 2008; Goran and Gage, 2011). The main difference between the two groups is that the ED population tends to have more behavioral and social difficulties than students identified with SLD (Goran and Gage, 2011; Lane et al., 2006; McConaughy, Mattison, and Peterson, 1994). Students identified with an ED may experience more behavioral and social difficulties but Handwerk and Marshall (1998) found no significant differences between ED and SLD groups on teacher reports of attention problems. In the past, because ED and SLD groups shared many features, several students who were eligible

under the ED category were also served under the SLD label (Chandler and Jones, 1983a; Chandler and Jones, 1983b).

Further, students with ED and ADHD are more likely to be suspended or expelled compared to other students (Achilles et al, 2007). Lastly, students who meet criteria under ED, SLD, and OHI experience more difficulty matriculating from high school (Kortering, 2009; Kortering and Christenson, 2009). Based on the literature demonstrating the similar characteristics shared among the three groups, ED, SLD, and OHI are ideal groups to compare and contrast.

The research presented above provides evidence of the difficulties students identified with ED, SLD, and OHI encounter. Fortunately, several interventions have been developed to address the needs of students in all three categories.

Behavior Interventions

ED: Behavior Interventions. The literature consistently indicates students categorized with ED have significant academic difficulties across the areas of math, reading, and writing (Nelson, Benner, Lane, and Smith, 2004; Reid, Gonzalez, Nordness, Trout, and Epstein, 2004; Trout, Nordness, Pierce, and Epstein, 2003; Wagner et al., 2005). Studies also show externalizing and internalizing behavior problems are predictive of poorer academic performance (Lane, Barton-Arwood, Nelson, and Wehby, 2008; Nelson et al., 2004), however, there is evidence indicating externalizing behavior problems do not account for all of the deficits observed in the academic performance of student with ED (Nelson, Benner, Neillm and Stage, 2006). Accordingly, there are interventions seeking to address the behavioral, academic, and psychological needs of students identified as meeting criteria under ED.

As noted above, students who qualify under the category of ED are a diverse group of students who have a variety of needs. These needs are often of an academic, behavioral, and mental health nature. A range of intervention approaches exists to meet the needs of students who are at-risk and/or meet eligibility under ED. Common interventions range from those targeting specific academic deficits (e.g. math, reading), behaviors common to ED, and social skills. Many approaches have been effective in improving academic performance and behaviors during the school years (Reddy, Newman, De Thomas, & Chun, 2009), but little is known about the long-term benefits. A variety of interventions have been developed striving to integrate best practices. These interventions focus on fostering relationships, using academic supports (e.g., tutoring, small-group), using teachers trained to teach students with ED, incorporating students' interests and goals, providing access to mental health services, and implementing early transition planning. The goal of these interventions is to promote better school experiences for students with ED and a more successful transition to adulthood (Wagner and Davis, 2006).

Of the various interventions that have been developed to target the behaviors of students under the ED category, nationally, approximately half of the secondary students served under ED receive behavioral interventions or are involved in a behavior management plan (Wagner, et al., 2004). Common interventions to improve behavior in students with ED involve peer tutoring, instruction or evaluation. Peer tutoring is an instructional strategy that links students together to practice an academic task. Locke and Fuchs (1995) described positive findings of on-task behavior and social interaction of fifth and sixth grade boys with ED following an intervention of peer reading instruction. Similarly, in a program using social skill training, peer tutoring, and behavior management strategies with two cohorts of

student with ED, Kamps, Kravits, Rauch, Kamps, and Chung (2000) found a reduction in inappropriate and negative behavior and an increase in positive behaviors and academic engagement. While there is a large body of literature addressing the efficacy of peer-mediated approaches, there is little research specifically focused on such efficacy with students with ED .

Research suggests that self-evaluation of personal behavior, a self-management tool, is an effective intervention to improve the behavior of students with ED and helps provide students with more responsibility and independence (McQuillan, DuPaul Shapiro, & Cole, 1996). For example, Sutherland and Snyder (2007) engaged middle school students with ED in an intervention that included self-evaluation of their reading through graphing and reciprocal peer tutoring. The results indicated a reduction in disruptive behavior and an increase in active classroom responsiveness.

The development of interventions based on the function of a student's behavior is an effective tool for reducing disruptive behaviors in students with ED (Gage, Lewis, & Stichter, 2012). These interventions are individualized and target the unique function of the student's behavior. Kern, Delaney, Clarke, Dunlap, and Childs (2001) examined the effect of curricular modifications on the classroom behavior of elementary students with ED, which were based on functional-behavior assessments. After curricular changes were implemented, the authors observed an increase in academic productivity and task engagement, and a decrease in disruptive behavior. In a similar study, Lane and colleagues (2007) presented results of function-based interventions conducted with two middle school children identified under ED. Both students responded well to the interventions, with increased participation, compliance, and grades, and maintenance of these results over time.

Involving parents in school-based interventions is also an effective way of managing behaviors of students served under ED. Research suggests that Parent-Teacher Action Research (PTAR) is one such method. This approach includes a team comprised of a parent, parent liaison, and the student's teacher. The team plans the student's specific academic, behavioral, and social goals at school and home for the school year, and practical ways of measuring progress. In conjunction with social skills instruction in the areas of communication, interpersonal skills, personal skills, and response skills, this intervention resulted in a decrease of aggression and social problems and an increase in on-task engagement (McConaughy, Kay, & Fitzgerald, 1998). In the second year follow-up of the PTAR program, McConaughy, Kay, and Fitzgerald (1999) again found improvements in the PTAR group compared to the control group. They found significantly lower externalizing and internalizing behaviors among students and improvement on measures of cooperation and self-control.

Teachers and clinicians recognize the importance of providing all students with praise and positive reinforcement. It is no different in classrooms with students being served under ED. Sutherland, Wehby, and Copeland (2000) conducted a unique intervention in which they sought to increase the number of behavior-specific praise statements (BSPS) the teacher provided their students with ED as a way to increase the on-task behavior their students. They conducted the intervention with one teacher who taught nine students with ED. The teacher was taught to provide the students with specific praise statements, such as "Laura I like the way you are sitting quietly and looking at me" vs. "Laura, good job today". The results revealed a short-term increase in the teacher's rate of BSPS and a long-term increase in the on-task behavior of the students.

Another widely used and accepted intervention to address deficits in social competence of students with ED is social skills training. Studies based on this approach, however, have only shown modest positive results or no results at all (Maag, 2005). Social skills training is an intervention focused on building social competence in students to help them in their interactions with and acceptance from peers. Quinn et al. (1999) found universal social skills instruction was not very effective with ED students in general, but found it to be more effective when specific social skills deficits, such as cooperating, were targeted. Other studies seem to suggest social skills interventions are only effective when delivered in conjunction with other interventions (McConaughy et al., 1998). In a comprehensive review of studies, Maag (2005) analyzed social skills training with ED students and identified several issues limiting findings. These were, (1) students with ED were not able to generalize the skills they learned to other settings and were not taught to do so, and (2) there were no specific steps followed in social skills training, therefore implementation of interventions differed with outcomes observed among students. Further (3) social skills training did not correspond directly to the student's deficiencies, and (4) there were no valid treatment outcome measures to track student progress and determine if the intervention was truly effective.

However, Cook and colleagues (2008) conducted a more recent meta-analysis of efficacy of social skills interventions in adolescents with ED. Their results suggested social skills may be an effective treatment for students with ED because improvements in social competence were noted in over half of students with ED compared to just one third of controls. Therefore, it seems that if social skills instruction is used to target specific

behaviors related to social competence it may be an effective tool, but if used to treat behaviors in general, it may not be useful.

ADHD: Behavior Interventions. There was no literature on interventions explicitly developed for students served under the OHI group, as the category includes a heterogeneous group of students. As such, interventions are described that were developed specifically for students with ADHD, the largest group represented in the OHI category. Several interventions used with students served under ED are also used to target the behaviors of students with ADHD. Some of these interventions include self-management strategies and peer monitoring (Davies and Witte, 2000; Gureasko-Moore, DuPaul, & White, 2006; Mathes & Bender, 1997). Self-management strategies are ideal tools to use in the schools because they shift much of the responsibility of the teacher to the student (Cole, 1992). In addition, when student accuracy training is incorporated, significant increases in positive behavior and generalization have been noted (Ardoin & Marten, 2004; Hoff & DuPaul, 1998; Mathes & Bender, 1997). One study exploring the efficacy of a self-management intervention with three adolescent students diagnosed with ADHD found the intervention helped to increase their organizational skills (Gureasko-Moore et al., 2006). The students were instructed on how to self-manage their behaviors and organization through goal setting, use of a self-monitoring checklist, and through self-evaluation of their progress toward goals. In addition, students learned methods to identify problem areas and how to target the areas (Gureasko-Moore, et al., 2006). Self-management interventions have also been found to positively impact the performance of students who continued experiencing behavioral difficulties after receiving pharmacological interventions (Mathes & Bender, 1997). The students were trained on how to use a self-monitoring sheet, whereby they responded if they were on-task

or off-task whenever they heard a tone from a tape recorder in the classroom. Following several days of training and independent self-monitoring, both with and without the cueing tone, the students were found to have an increase in on-task classroom behaviors (i.e. attending to instruction, completing assignments; Mathes & Bender, 1997).

Research suggests that goal-setting interventions, a component of self-management strategies, are an effective tool when combined with computer-assisted instruction (CAI; Mazzotti, Wood, Test, and Fowler, 2012). In general, CAI uses computer software to offer an alternative, interactive method for students to learn skills, whether they are behavioral or academic in nature (Clarfield & Stoner, 2005; Mautone, DuPaul, & Jitendra, 2005; Ota & DuPaul, 2002; Raggi & Chronis, 2006; Mazzotti, et al., 2012). Mazzotti and colleagues (2012) coupled the Self-Determined Learning Model of Instruction (SDLMI) and CAI to teach students how to set goals, make a plan to manage the goal, and make changes to meet the goal. Results suggested as participants learned more about goal-setting methods through computer-assisted SDLMI, there was a reduction in their disruptive behavior (Mazzotti, 2012).

Similar to self-management interventions, peer-monitoring allows teachers to assign more responsibility to students for managing their behavior (Davies and Witte, 2000). Fowler (1986) explains that peer monitoring is a strategy used to encourage students to monitor each other's behavior and reinforce positive behavior in one another. Davies and Witte (2000) completed a study examining the efficacy of an intervention, combining peer monitoring and self-monitoring, on the talking-out behaviors of four students with a diagnosis of ADHD. After training and implementing the intervention, the researchers found a significant decrease in the inappropriate verbalizations of students with ADHD, as well as

maintenance of these behaviors. Therefore, peer monitoring may be a useful intervention in the classroom and may potentially help students with ADHD experience less difficulty with their peers.

Functional assessment-based interventions are also another effective approach in targeting the off-task and disruptive behaviors of students with ADHD (DuPaul, et al., 2013; Ervin, et al., 2000; Ervin & DuPaul, 1996; Ervin, DuPaul, Kern, & Friman, 1998; Schultz, Storer, Watabe, Sadler, & Evans, 2011; Stahr, Cushing, Lane, & Fox, 2006). As mentioned in the behavioral intervention section for students with ED, assessments based on the function of a student's behavior allows practitioners to individualize the intervention to the unique function of a student's behavior (Gage, et al., 2012). For example, Ervin, et al., (2000) implemented function-based interventions with three students with ADHD, and findings indicated environmental modifications helped decrease undesirable behaviors. Similarly, Stahr, et al. (2006) collected functional assessment data indicating that his behaviors were maintained by attention and escape from tasks. After implementing interventions targeting these areas, a decrease in off-task and disruptive behaviors were observed.

Another intervention that has been found effective for students with ADHD is that of contingency management (Loe & Feldman, 2007; Pelham, Wheeler, & Chronis, 1998). Contingency management is a technique whereby a consequence (usually a reward) is contingent upon specific behaviors. This can be used individually, or classroom-wide with additional contingencies tailored specifically to the preferences of certain students. Common interventions employ token reinforcement or point systems, whereby students earn tokens/points based on producing specific positive behaviors, and in turn can use the

tokens/points collected for a reward/prize (Hackenberg, 2009). Contingency interventions can be implemented in a variety of creative ways. For example, students can use daily report cards, in which specific behavioral goals are outlined, and when attained, the student receives a reward at home (Chronis, Jones, & Raggi, 2006; Fabiano, et al., 2010; O’Leary, Pelham, Rosenbaum, & Price, 1976). Another way contingency management has been found to help improve the classroom behavior of special education students with ADHD is through the use of physical activity as a reward/positive reinforce (Azrin, Vinas, & Ehle, 2007).

Similar to the research findings for students with ED, social skills interventions have not been found effective for students with ADHD (Pelham, et al., 1998). While students with ADHD often struggle in their peer relationships because of their overly active and impulsive behaviors, social skills interventions often do not have an impact because training is usually focused on skill deficits (DuPaul & Weyandt, 2006). One promising use of social skills interventions in students with ADHD is when it is combined with parent training (Chronis, et al., 2006). Although parent training is not very feasible in the school setting, when parent training is combined with social skills training, behavior improvements and generalization of skills have been noted in school and home (Chronis, et al, 2006).

SLD: Behavior Interventions. While the literature suggests that students served under the SLD category are at risk for behavioral problems (Lyon, 1996; Nowicki, 2003), there are no interventions specifically developed to target behavioral problems that students with SLD may experience. It can be assumed that if behavioral interventions are needed for a student served under the SLD category, interventions are similar to those provided for students with ED and ADHD.

Like students with ED and ADHD, social skills interventions are another type of intervention often used with the SLD population; however, they have not proven to be an effective intervention for students identified with SLD (Forness & Kavale, 1996; Kavale & Mostert, 2004). Social skills interventions seem to be ineffective in treating the social skill deficits evident in students with SLD for several potential reasons. Forness and Kavale (1996) and Kavale and Mostert (2004) suggest that social skills interventions do not adequately serve students with SLD because the interventions are often short-lived and have not considered the theoretical underpinnings of why social skill deficits exist in students with SLD.

Behavior interventions summary. Students in the ED and ADHD categories receive similar behavioral interventions. Interventions commonly provided to students in both groups include peer-mediated interventions (i.e. peer tutoring, peer monitoring), functional assessment-based interventions, and self-management strategies (Joseph & Eveleigh, 2011). In addition, social skills interventions are generally not effective in treating the behavioral or social difficulties exhibited in social contexts for students with ED, ADHD, or SLD. Overall, students served under ED and students with ADHD appear to benefit similar types of behavioral interventions, although the rate at which each groups receives the interventions are unknown.

Academic Interventions

ED: Academic Interventions. The positive impact of peer-mediated interventions, such as peer-tutoring, on the problem behaviors of students identified with ED is comparable to its usefulness in targeting their academics (Miller, 2005). Ryan, Reid, and Epstein (2004) reviewed fourteen studies that conducted peer-mediated interventions with students with ED.

The interventions involved students who taught their peers on a teacher-selected lesson. They reviewed studies including peer groups of children and adolescents of the same age and different ages focusing on a variety of academic subjects, such as math, reading, spelling, history, English, and science. The results of the review indicated peer-mediated interventions were generally successful in improving the academic achievement of students with ED across different academic areas and grade levels.

Self-management is a common intervention used to enhance the academic achievement of students identified with ED. Self-management interventions mainly include self-monitoring, self-evaluation, self-instruction, goal-setting, and strategy instruction (Mooney, Ryan, Uhing Reid, and Epstein, 2005). In a review of self-management interventions for individuals with ED, Mooney et al., 2005 found the interventions mostly improved math calculation skills, but were also found effective for writing, reading, and social studies.

Reading deficits are of particular concern in students with ED, especially since much of the evidence suggests a relationship between reading difficulties and antisocial behavior in the ED population. Many interventions have therefore been created to target this academic area. McLaughlin (1992) investigated the impact of a written feedback intervention on the reading of 5 male students in a self-contained classroom for students receiving services under ED. The written feedback intervention provided the students with positive reinforcement on their performance, such as “Better than yesterday” or “You’ve really improved”. The results of the intervention indicated an improvement in the student’s reading performance.

Wehby, Falk, Barton-Arwood, Lane, and Cooley (2003) investigated the effect of a reading curriculum on the reading achievement and behaviors of students with ED. The

participants were eight students receiving services under ED in a self-contained special education classroom. The reading interventions included two programs: *Open Court Reading* (OCR; Adams et al., 2000), a curriculum for K-1st grade readers focused on blending sounds into words administered to students 4 days a week for 45 minutes, and Peer-Assisted Learning Strategy (PALS), a program in which students with ED were paired with higher performing students to work on activities enhancing fluency, letter-sound associations, decoding simple words, and recognizing sight words. The interventions resulted in moderate gains in nonsense word fluency, sound naming, blending, and segmenting achievement areas. However, there were no gains in the student's standardized scores or a decrease in problem behaviors. Similarly, in a reading intervention using *Horizons Fast Track program* and *Peer-Assisted Learning Strategies*, Barton-Arwood, Wehby, and Falk (2005), found moderate improvement, with inconsistent results across reading skills, such as phoneme blending and segmentation, nonsense word fluency, word reading and oral reading fluency. Academic engagement improvements were also found to be directly related to the intervention. However, a reading intervention using the *Corrective Reading* program along with a repeated reading intervention in which students read passages several times resulted in reading fluency growth (Strong, Wehby, Falk, and Lane, 2004). This suggests that readings programs should be carefully selected for use in the ED population, with a focus on reading programs developed or adapted specifically for students with ED.

Another intervention with promising results with the ED population includes providing choice and preferred rewards when completing academic tasks. Cosden, Gannon, and Haring (1995) conducted a study examining the effect of student-control on academic task completion and accuracy with three male students identified under ED. Study findings

indicated that when some students with ED were provided with choice over academic tasks and rewards for completion of the tasks, they demonstrated a significant increase in academic task completion and accuracy. Dunlap et al. (1994) also conducted a study on academic choice making with students in ED classrooms and found it helped to increase task-engagement and decrease problem behaviors. Similarly, Sutherland, Alder, and Gunter (2003) presented evidence indicating that when students with ED are given more opportunities to respond to academic tasks, the students provided more correct responses, were more academically engaged, and demonstrated less disruptive behavior.

Though there is minimal research on the long-term impact of school-based interventions, Sinclair, Christenson, and Thurlow (2005) conducted a four-year follow up of a study on the effects of an evidence-based intervention, *check & connect*, for students classified as ED. The *Check and connect* intervention consists of seven components: routine monitoring, individualized intervention, relationship building, academic motivation, following students from school to school, problem solving, and encouraging affiliation with school and learning. Compared to the control group, the students with ED who received the *check & connect* intervention had a lower percentage of dropout and higher attendance and enrollment status in school.

All of the academic interventions discussed thus far are school-based but the home setting is also important because many of the academic difficulties and problem behaviors manifest in the home. Cancio, West, and Young (2004) developed a homework completion intervention program for parents to implement at home with their six middle school boys served under ED. The intervention involved parent training, student homework contracts, homework checklists to evaluate, monitor, reinforce, and instruct, and preferred rewards for

homework completion. Following the intervention, the students increased homework completion, homework accuracy, and mathematics achievement.

ADHD: Academic Interventions. Interventions developed to target behavioral difficulties in students with ADHD are similar to academic interventions used for students with ADHD. For example, some of the more common and effective interventions include tutoring, task/instruction modifications, self-monitoring, strategy instruction, and homework-focused interventions (Daley & Birchwood, 2009; DuPaul, 2007; Nowacek & Mamlin, 2007).

The positive impact of peer monitoring on behavior has been found to help improve the academic performance of students with ADHD. Peer tutoring is an academic intervention in which a student provides one-to-one instruction and/or assistance to another student (Daley & Birchwood, 2009). This form of tutoring is often implemented class-wide (Greenwood, Maheady, & Delquadri, 2002), and therefore would most benefit students who are receiving special education services under OHI while they are in their general education classes. For example, in one class-wide tutoring intervention study, they found that students with ADHD had improved scores in math and spelling, and they demonstrated increased academic engagement (DuPaul, Ervin, Hook, & McGoey, 1998). In addition, research indicates an increase in academic performance for students with ADHD who received parent tutoring, which involves individualized instruction, feedback, and dynamic responding (Hook & DuPaul, 1999).

Modifications to academic tasks and/or instruction occur in a variety of ways, and are usually individualized for students with ADHD in special education. For example, modifications may include increased time on tasks, shortening tasks/assignments, or altering

the delivery of instruction (Daley & Birchwood, 2009). One study examining the use of extended time for students with ADHD found that increased time on tasks resulted in a greater number of problems being completed; however, students completed more problems correctly when provided with the standard completion time (Pariseau, Fabiano, Massetti, Hart, & Pelham, 2010). This finding indicates that extended time should be used with caution and only if the student with ADHD would truly benefit from the modification. As mentioned earlier in the behavior section for students with ADHD, teachers also use CAI as an instructional modification for students with ADHD. With CAI, teachers use computer software to supplement their own instruction. Case studies on the use of CAI for students with ADHD have proved to be effective in improving math and reading performance, and task engagement (Clarfield & Stoner, 2005; Mautone, et al., 2005; Ota & DuPaul, 2002; Raggi & Chronis, 2006). Finally, students with ADHD may benefit from modifications made to the group size. For instance, Hart, Massetti, Fabiano, Pariseau, and Pelham (2011) conducted a study that found students with ADHD were more productive and on-task during small-group instruction versus whole-group, but whole-group test-taking was more beneficial when testing.

Self-monitoring interventions, in which students establish goals and monitor their own progress, also have a positive impact on the academic performance of students with ADHD (Daley & Birchwood, 2009). In one study, students with ADHD who were taught to monitor and graph their own reading, writing, and math performance made significant improvements in their academic performance (Shimabukuro, Prater, Jenkins, & Edelen-Smith, 1999). While it seems logical that an individual's academic performance would improve when self-monitoring one's academic performance, research suggests that students

with ADHD may have more academic improvements when self-monitoring their behavior (Harris, Friedlander, Saddler, Frizzelle, & Graham, 2005). Harris and colleagues (2005) conducted a study on self-monitoring of attention and self-monitoring of performance in student with ADHD. The students made gains in both conditions but had significantly more improvement in spelling when the students self-monitored their behaviors.

While there is limited research in this area, strategy instruction is a promising academic intervention for students with ADHD (Daley & Birchwood, 2009; Nowacek & Mamlin, 2007). Research indicates that direct strategy instruction helps to enhance the academic performance of students with ADHD (Raggi & Chronis, 2006). Common strategies taught include organizing materials, note taking, and the proper use of sticky notes and highlighters (Stormont, 2008; Boyle & Rivera, 2012). Iseman and Naglieri (2011) conducted a study on the impact of cognitive strategy instruction on math calculation. During the intervention students with ADHD participated in discussions to evaluate and reflect on the strategies they employed when completing math assignments. In addition, students were encouraged to explore and use other strategies (e.g. checking their work). Results of the study indicated that students with ADHD who participated in the cognitive strategy intervention made greater improvements in their math performance and generalized these skills to other math work (Iseman & Naglieri, 2011).

SLD: Academic Interventions. Research indicates reading interventions utilizing additional information and explanations, modeling, small group instruction, cues and reminders, and which encourage direct questions and dialogue amongst teachers and students, or peers, are most helpful in enhancing the reading comprehension of older students with SLD (Swanson, 1999b), suggesting the need to incorporate multiple strategies (Gersten,

Fuchs, Williams, & Baker, 2001). For example, Chan, Cole, and Barfett (1987) used a technique in which they directly instructed and provided explanations to students with and without learning disabilities on how to identify inconsistencies within a sentence. Directly teaching the strategies and providing explanations helped improve the reading comprehension of students with SLD, but not for their non-disabled peers (Chan, et al., 1987). With regard to the use of questioning and dialogue, Idol-Maestas (1985) studied the use of providing comprehension questions cueing students with SLD to attend to important information in text. The use of questions helped to increase their reading comprehension and oral reading performance. However, once the intervention was removed, the students' reading performance declined (Idol-Maestas, 1985). Lastly, another study used both direct strategy instruction and questioning with students with SLD, which proved to be an effective intervention (Chan & Cole, 1986). In different experimental groups, students identified with SLD were taught to underline important and interesting text within a passage, or they were taught to develop questions about the text they were reading (Chan & Cole, 1986).

Effective reading fluency interventions for students with SLD often include models of reading fluency, such as the teacher or peer, and repeated reading with feedback (Chard, Vaughn, & Tyler, 2002). For example, Simmons, Fuchs, Fuchs, Mathes, and Hodge (1995) conducted a study incorporating peer tutoring and repeated reading, which implicitly provided students in the study with a model. The students with SLD who received the intervention performed significantly better than the control group on a reading fluency measure (Simmons et al., 1995). Another study encompassed modeling by a teacher, repeated reading with the teacher and a tutor, and peer reading (Sutton, 1991). The study resulted in growth in reading fluency and a decline in reading errors for students with SLD.

In terms of the most effective math interventions, students with SLD tend to benefit most from interventions incorporating teacher-directed instructions, strategy instruction, and self-monitoring (Kroesbergen & Van Luit, 2003; Maccini & Hughes, 1997; Maccini, Mulcahy, & Wilson, 2007). For example, in 1989, Hastings, Raymond, and McLaughlin conducted an intervention to improve the money counting skills in students with SLD. The intervention involved directly teaching students how to count and teaching them strategies to keep counted money and uncounted money separated. In addition, rewards were provided for student who met the criteria set for them. The results of the study indicated that students with SLD significantly improved in their money counting skills (Hastings, et al., 1989). In 2002, Scarlato and Burr provided teacher-directed instruction on fraction and decimal skills to students with SLD. The instruction included teaching the skills, modeling the skills, guided practice, independent practice, and corrective feedback; findings indicated that the intervention helped improve their skills (Scarlato and Burr, 2002).

Regarding the use of self-monitoring procedures for math, Hutchinson (1993) provided students with cue cards of self-questions for self-monitoring, a worksheet to help students remember the goal, teacher modeling of the strategies, and corrective feedback. The students with SLD who received the intervention demonstrated improvements on their math problem-solving skills (Hutchinson, 1993). Similarly, teaching students self-instruction skills for math problems involving multiplication and division proved to be an effective intervention (Laird & Winton, 1993). Another intervention that expanded the use of self-monitoring procedures included an intervention in which students with SLD learn to plan for a task, attend to the material, simultaneously use various information to solve a problem, and solve a math problem in a specific order (Naglieri & Johnson, 2000). The intervention

resulted in greater gains on math worksheets for students with SLD who had the lowest scores during baseline (Naglieri & Johnson, 2000).

The most salient components of writing interventions for students with SLD, which are similar to reading, involve teaching steps of a writing process, teaching and explaining different types of writing, and feedback on writing from teacher or peers (Gersten & Baker, 2001). Once instruction is complete and students are taught to self-monitor their writing, students with SLD are shown to make significant improvements (Shimabukuro, et al., 1999). For example, students with SLD were taught how to self-monitor their writing, which helped to increase their writing performance and accuracy (Shimabukuro, et al., 1999).

In general, Swanson & Hoskyn (2001) suggest that there are eight main instructional strategies that comprise the most successful interventions for adolescents identified with SLD. The eight strategies include: (1) verbal questioning and dialogue, whereby students and teachers are developing questions and discussing the topics of focus; (2) sequencing and segmentation of skills, which includes sequencing material with increasing difficulty; (3) skill modeling and strategy cues, where teachers or peers are modeling the skills and strategies students have learned; (4) providing organizing strategies and explicit practice; (5) small-group setting for learning and practicing skills; (6) indirect teacher activities, such as homework and parent help; (7) use of technology and computers for practicing skills such as computer-assisted instruction; and (8) scaffolding of students (Swanson, 1999a; Swanson & Deshler, 2003; Swanson & Hoskyn, 2001).

Academic intervention summary. The academic interventions provided to students in the ED, ADHD, and SLD categories share some similar features but are substantially different in approach and focus. The few similarities are those also used in a behavioral

context, which include peer-mediated and self-management interventions (Joseph & Eveleigh, 2011; Taft & Mason, 2011). Concerning the differences in interventions for students in the three special education categories, the interventions seem to be more basic for students in the ED category and more complex for students in the ADHD and SLD categories. For example, academic interventions typically provided to students under the ED category included positive reinforcement and feedback, and contingency models to shape student's behaviors to complete tasks. In contrast, interventions provided to students with the ADHD and SLD are more focused on strategy instruction such as teaching note-taking and organization skills, as well as higher order academic skills such questioning and engaging in dialogue about the academic material.

Mental Health Interventions

ED: Mental health interventions. School-based mental health (SBMH) interventions treat psychological and emotional disorders and/or distress in students, while also promoting their mental well-being. According to nationally representative data, a diverse population of students with special education services receives mental health services, such as those served under the autism or other health impairments categories, with the largest group to receive these services being students served under the category of ED (Levine, Marder, and Wagner, 2004; Wagner et al., 2004). There are many types of mental health interventions and some of the more promising and effective ones within schools include cognitive-behavioral therapy, social skills training, and teacher consultation (Hoagwood and Erwin, 1997).

Mental health interventions implemented in the schools have been found to be just as effective as those provided in clinics (Armbruster and Lichtman, 1999) and they do not

impact the use of services outside of schools (Slade, 2002). Specifically, they are effective in improving the emotional and behavioral functioning of students (Nabors and Reynolds, 2000). According to a review of SBMH services, some features helping to enhance the effectiveness and sustainability of these interventions involve an ecological approach (integrating parents, teachers, peers), using many modalities, and incorporating the program into general classroom activities (Rones and Hoagwood, 2000).

Further, SBMH services are helpful in reaching children and adolescents who need services but have difficulty obtaining them (Armbruster et al., 1999; Weist, Patrick, Hastings, Ghuman, and Han, 1999), as well as gaining more parent involvement (Atkins, Graczyk, Frazier, and Abdul-Adil, 2003). When SBMH services are available in schools, students are more likely to use them regardless of their mental health status or the possession of health insurance (Slade, 2002). While many SBMH models do not target specific populations (Rones et al., 2000), special education students have a high rate of using these services (Slade, 2002), with the expectation that when available, students with ED are accessing and using services frequently.

Many school districts have successfully implemented SBMH services for students. One of the first school districts to develop a model was Dallas Public Schools in Texas. This model program is multidisciplinary and provides SBMH services along with physical health and other support services. Their program has reported outcomes of reduction in behavior problems, absences, and school failure (Jennings, Pearson, and Harris, 2000).

Baltimore City schools have also implemented district wide SBMH services. Not only have their services been effective in assessing and treating emotional and behavioral problems of general and special education students (Flaherty and Weist, 1999), but they also

found teachers referred fewer students for ED and fewer students were eligible for special education services under the category of ED (Bruns, Walrath, Glass-Siegel, and Weist, 2004). This is also a positive finding because it indicates students who are categorized as socially maladjusted and would therefore not receive special education services under ED (Heathfield and Clark, 2004), would have the option of receiving services promoting their psychological well-being.

Another system with a SBMH program is Memphis City Schools, a program that received recognition from both the American Psychological Association and National Association of School Psychologists in 1982 (Pfeiffer and Reddy, 1998). Although there is not much data supporting the program's effectiveness, the district provides prevention and treatment services for general and special education students, as well as special services for abused and neglected adolescents and suspended students (Pfeiffer et al., 1998).

As mentioned earlier, most SBMH programs are available to all students, meaning many studies have not specifically investigated the impact of mental health interventions on students with ED. This is interesting considering how therapeutic interventions could significantly address the complex emotional, behavioral, and psychological needs of students with ED. A few studies have evaluated the effectiveness of mental health interventions with students receiving special education services under the ED category (Roberts, Jacobs, Puddy, Nyre, & Vernberg, 2003; Robinson & Rapport 2002; Vernberg et al., 2006).

Two of these studies examined an intensive mental health program (IMHP) for students categorized under ED, providing evidenced-based services (psychotherapy, behavioral management, etc.) within a half-day therapeutic classroom to help treat and to enhance psychological, behavioral and academic functioning of students (Roberts, et al.,

2003; Vernberg et al., 2006). IMHP operates under an ecological framework in which there is collaboration and coordination across settings with families, teachers, other school personnel, and community agencies. Researchers found the majority of students were functioning better and in less restrictive settings after receiving IMHP services (Roberts et al., 2003). In 2006, IMHP data continued to show improvement in behavioral and emotional functioning of students with ED (Vernberg et al., 2006). Robinson and Rapport (2002) described an ecologically-sensitive day treatment program for students with ED, similar to the program above. The program consisted of academic instruction and mental health services provided by a multidisciplinary team. The program involved evidenced-based practices, such as token economies, verbal praise, social skills training, behavior contracts, and family therapy. At the end of the academic year, authors noted a reduction in externalizing and internalizing behavior (Robinson et al., 2002). Although the two programs discussed above target ED students and are effective, a limitation is that they serve students in relatively restrictive environments, as opposed to serving them within the general classroom or their neighborhood school (least-restrictive environments).

Other studies have examined SBMH programs with adolescent students who have severe behavioral problems, such as disruptive behavior, aggression, inattention, hyperactivity, but are not identified as receiving special education services. One such program, Youth Experiencing Success in School (Y.E.S.S.) mostly served children with Attention Deficit Hyperactivity Disorder (ADHD) and Oppositional Defiant Disorder (ODD; Owens et al., 2005). Program components were behavioral parenting sessions, teacher consultation, coordinating care across disciplines and settings, and individual sessions with the children. Per parent and teacher report there were significant improvements in behavioral

functioning and social skills. In a recent study, Atkins and colleagues (2006) evaluated the impact of the SBMH PALS (Positive Attitude toward Learning in School) program on children from high poverty areas with the DSM-IV TR diagnosis, Disruptive Behavior Disorder (DBD). The PALS program integrated classroom behavior management (token economy, social skills, peer tutoring, self-monitoring, time-out) and family services (home visits or parent groups), and monitoring services. The results indicated PALS increased positive behaviors and academic performance in participating children, with better retention than children served in the area mental health clinic (Atkins et al., 2006).

ADHD: Mental Health Interventions. There is minimal research on the use of mental health interventions in schools for students with ADHD, as emotional issues are not the major concern, and the most effective interventions are those targeting behavioral and academic deficits (DuPaul & Eckert, 1997). As discussed above, cognitive-behavioral therapy (CBT) is one of the more common mental health interventions utilized in schools (Hoagwood and Erwin, 1997). CBT is an intervention where an individual learns to positively alter their cognitions in order to achieve a desired behavior (Dobson, 2010). In contrast, literature on cognitive-behavioral interventions used with students with ADHD has been defined as interventions that promote the development of self-control and problem-solving skills, such as self-management, self-reinforcement, and cognitive rehearsal to regulate their behavior (Abikoff, 1991; DuPaul & Eckert, 1997; DuPaul, Eckert, & Vilaro, 2012). The definition of cognitive-behavioral interventions used with students diagnosed with ADHD is similar to the self-management interventions that have been described in the academic and behavioral sections. It can be assumed that traditional CBT has not been utilized with students diagnosed with ADHD because their difficulties with behavior and

impulse regulation have neurobiological origins versus a basis in negative cognitions. Previously, research on self-management cognitive-behavioral interventions with students with ADHD suggested only modest improvements in behavior (Abikoff, 1991; DuPaul & Eckert, 1997), but a more recent meta-analysis indicated that cognitive-behavioral interventions employing self-regulation strategies are extremely useful in improving the behavior of students with ADHD. In general, the literature indicates that behavioral difficulties, not mental health, are the major concerns for students with ADHD; as such, behavioral interventions are the services of choice for students who have been diagnosed with ADHD.

SLD: Mental Health Interventions. As reviewed previously, students with SLD experience a number of difficulties with self-concept and social skills, and are at-risk for mental health disorders like depression. To this end, a number of mental health interventions have been developed to address these concerns, although not all of them are delivered within the school environment.

Bender and Wall (1994) suggest secondary students with SLD receive interventions targeting self-concept in the form of counseling and rational emotive behavior therapy (REBT), an empirically-valid intervention and form of CBT that helps students realize they often create their discomfort with their irrational thoughts and aids them in working toward changing their irrational thinking (Dobson, 2010). Counseling using REBT and other forms of CBT are generally the most effective in improving self-concept and esteem (Bender & Wall, 1994). In addition, when targeting self-concept in the schools, adolescents with SLD respond more favorably to counseling than academic interventions, whereas elementary age children with SLD respond more positively to academic interventions targeting self-concept

(Elbaum and Vaughn, 2001). In a follow-up meta-analysis conducted by Elbaum and Vaughn (2003), they expanded their findings with results indicating the students who demonstrated the most improvement in self-concept after intervention are those who had low levels of self-concept prior to the intervention, suggesting self-concept interventions are not necessary for all students with SLD.

Mental health intervention summary. Although most SBMH are open to students in general education and special education programs, the majority of the school mental health programs appear to target students with severe emotional and behavioral problems. When considering therapeutic approaches, CBT has strong empirical support in the school setting, which is why it is often the technique of choice with students in special education. While research indicates that traditional CBT is effective with students served under the ED and SLD categories (Maag & Swearer, 2005), it is surprisingly not useful for students with ADHD (Abikoff, 1991; DuPaul & Eckert, 1997).

Rationale

The previous review has indicated that a wide variety of school-based interventions have been developed to serve the complex behavioral, academic, and mental health needs of special education students with ED, ADHD, and SLD. The research review indicates that most of the services students in special education receive are directly related to the difficulties and limitations they experience (Levine et al., 2004), and the types of interventions received across the three categories share a number of similarities. These similarities include, self-monitoring, peer involvement (tutoring, monitoring, etc.), family engagement, and school-community collaboration. These interventions have illustrated the importance of ecological frameworks for treatment, in which the individual is treated and key

individuals and systems impacting their lives (parents, teachers, peers, community organizations) are integrated into the treatment plan. Because students with ED, ADHD, and SLD benefit from similar interventions, it is important to know and compare the rate at which students within these three categories truly receive these services. In addition, most intervention studies conducted with ED, ADHD, and SLD have relied on small sample sizes, indicating a need for a population-based study to increase generalizability of findings.

Although there has been an overall increase in services for adolescents in special education (Wagner, Cameto, and Newman, 2003), research indicates they are less likely to have intervention services (Wagner et al., 2006). Therefore, the proposed study aims to examine and compare the rate at which school-based ED, ADHD, and SLD interventions are provided, as well as the behavioral and psychological functioning of these three groups using data from a population-based study. This study will use nationally representative intervention data from the National Longitudinal Transition Study – 2 (NLTS2) on the interventions that were provided to special education students, including information regarding the different types behavioral, academic, and mental health interventions typically provided to students. NLTS-2 provides prospective, nationally representative data on special education students in high school, allowing for an examination and comparison of interventions and functioning for students in the ED, SLD, and OHI categories. This study will help link the literature review regarding specific types of interventions to the rate at which students in the three categories truly receive the services by addressing the following questions:

1. A review of research has indicated that similar behavioral interventions are provided to students with ED and students with ADHD (largest group of students served under

- OHI). In this regard, within the NLTS-2 data set, (a) are students served under the ED and OHI categories receiving similar rates of behavioral interventions, and (b) are students under the ED and OHI categories receiving behavioral interventions at significantly higher rates than their peers served under the SLD category?
2. The literature suggests that academic interventions are the focal point for students with SLD, and that academic interventions are more complex for students with SLD and ADHD compared to those received by students in the ED category. In this regard, within the NLTS-2 data set are students served under the SLD category receiving academic interventions at significantly higher rates than their peers in the ED and OHI categories?
 3. Research on school mental health indicates that many of the mental health services are targeted toward students served under the ED category, and students with ADHD often do not benefit from such services. In this regard, within the NLTS-2 data set, (a) are students served under the ED category receiving mental health interventions at significantly higher rates than their peers served under SLD and OHI, and (b) are students served under the OHI category receiving mental health interventions at significantly lower rates than their peers served under SLD?
 4. Special education research indicates that students served under special education are at risk for a number of behavioral and emotional difficulties, with students in the ED category experiencing higher levels of difficulty. In this regard, within the NLTS-2 data set is the psychological and behavioral functioning of students served under ED significantly more impaired than that of their peers under SLD and OHI?

CHAPTER 3

METHODS

This study drew from data available from a national data set, the National Longitudinal Transition Study – 2 (NLTS2). The following section includes information about how participants were recruited and selected for NLTS2. It also describes the instruments used to collect data and the statistical analysis. The goal of the analysis was two-fold: First, to understand if students under the ED, OHI, and SLD categories receive school-based services and supports at significantly different rates; and second, to investigate the differences in behavioral and psychological functioning among special education students served under the ED, OHI, and SLD categories.

Participants

NLTS2 is a nationally representative study funded by the U.S. Department of Education designed to examine school characteristics and experiences of youth in special education. NLTS2 used a two-stage sample design to recruit school districts and participants. First, using stratified random sampling based on region, size, and community wealth, approximately 501 school districts and 38 special schools were selected from a universe of approximately 12,000 school districts and all known state-supported special schools primarily serving students with hearing and visual impairments, and multiple disabilities (Newman, Wagner, Cameto, Knokey, and Shaver, 2010). Analysis of the region, size, and wealth of school districts were weighted to assure that school district samples

approximated the school district universe (Wagner et al., 2005). Students were selected from the participating school districts by sampling approximately 1,100 in most disability categories with there being no more than a 3% standard error for most disability categories. Finally, students were disproportionately sampled by age to assure there would be enough students who were age 24 or older at the end of the study (Wagner et al., 2005). The sampling procedures resulted in data that included a sample of approximately 11, 270 students in special education (Newman et al, 2010). Data were collected on participants in five waves beginning in 2001 when youth were between 13 and 16 years of age and at least in grade 7 in 2000, and ended in 2010 when the oldest participants were 26 years old (Newman et al., 2010; Wagner et al., 2005).

To provide information on student characteristics, weighted percentages from Wave 1 on race/ethnicity, gender, grade, primary and secondary disability category, and medication usage were used and are visually presented in Table 1.

The weighted percentage of students receiving special education services under the primary category of ED in NLTS2 is 11.4% (Wagner, et al., 2003). Within the ED category, about 60% are White, 21.5% are Black, and 15% are Hispanic, and the majority is male (76%). According to the special educators' reports, the other top two disability categories of youth served under the primary disability category of ED included SLD (39.3%) and Attention Deficit Hyperactivity Disorder (ADHD; 23.8%). Lastly, about 41% of students with ED took prescription medication to alter mood or behavior.

Special education students being served under SLD as their primary disability represent 62% of the weighted population in NLTS2 (Wagner, et al., 2003). Under SLD, approximately 61% are White, 21% are Hispanic, and 16% are African-American, and

similar to other categories the majority is male (67.2%). On the basis of reports by special educators, the top two co-occurring disabilities of youth served under SLD includes ADHD (11.5%) and ED (4.2%). Approximately 12% of students with SLD took prescription medication for behavior or mood.

Table 1. Student Characteristics

Proportion by Group	Emotional Disability	Other Health Impairment	Specific Learning Disability
NLTS2 Population	11.4	4.60	62.0
Male	76.0	73.3	67.2
White	59.4	74.0	60.9
Black	21.5	12.6	16.1
Hispanic	15.3	11.0	21.0
Diagnosis of ADHD	23.8	40.7	11.5
Prescription Medicine (Behavior/Mood)	41.7	43.8	12.7
Household Earns \$25,000 or Less	44.0	23.8	36.6
Household Earns \$25,001-\$50,000	29.0	32.7	30.2
Household Earns More than \$50,000	27.1	43.5	36.2

Students served under the primary category of OHI represent 4.6% of the weighted population in NLTS2 (Wagner, et al., 2003). The OHI demographics are similar to the other categories in that approximately 74% are White, 13% are African-American, and 11% are Hispanic and the majority is male (73.3%). The top two co-occurring disabilities of students primarily served under OHI were ADHD (40.7%) and SLD (37%). Lastly, approximately 43% of students under OHI took prescription medication to alter behavior or mood.

Regarding similarities between the three groups, males comprise the majority of the students identified under the ED, OHI, and SLD categories, and students with ED and OHI receive similar rates of medication used to alter behavior or mood. With regard to racial composition differences, White students represent the largest proportion in the OHI category compared to White students in the ED and SLD groups; there is a larger percentage of Black students in the ED category compared to the proportion of Black students represented in OHI and SLD categories; and, lastly, there is a higher proportion of Hispanic students in the SLD category compared to the percentage of Hispanic students in the ED and OHI categories. In addition, a much larger proportion of students in the ED and OHI categories receive prescription medication for conditions related to their disability compared to their peers in the SLD category. Specific questions, source, and scaling used in student characteristics can be found in Appendix A.

Regarding information on the student's families and schools in Wave 1, the majority of the students under the ED, SLD, and OHI categories lived with their parents (81.5%, 90.7%, and 91.4%, respectively). Most of the students served under ED were from households earning less than \$25,000 (44%), while the majority of students served under OHI came from households earning more than \$50,000 (43.5%). Interestingly, household income among students in the SLD category was more evenly distributed compared to the distribution among students in the ED and OHI categories. Most students identified with ED, SLD, or OHI attended a regular school serving a wide variety of students (74%, 95.7%, and 92.8% respectively), but out of the three categories, students served under ED had the highest percentage attending a school serving only students with disabilities (14.3%). Furthermore, the majority of students with an ED received language arts instruction and mathematics in the

special education classroom (55.8% and 56.5%, respectively), while students with SLD and students with an OHI mostly received their language arts and mathematics instruction in the general education classroom (SLD: 55.1% and 61.9%, respectively; and OHI: 60.6% and 59.3%, respectively). The questions from which these variables are derived can be found in Appendix B.

Instruments

NLTS2 data collection involved the use of six different instruments. Parent/youth phone interviews and/or mail surveys, and transcripts were collected in all five waves from 2001 to 2009. Student assessments, school program surveys, and general education teacher surveys were used during the first two waves in years 2002 and 2004, respectively. In 2002, during the first wave, school characteristic surveys were also collected.

For the present study, data were derived from school program surveys, general education teacher survey, and parent/youth interview/surveys. The school program surveys included information on courses, classroom setting, instructional practices, class characteristics, related support and services, and school performance for students during the school year. The information was collected from three members of the staff most knowledgeable about the student, usually special educators. General education teacher surveys were collected for study participants who were enrolled in at least one general education academic class. Teachers who taught the student's first general education course of the student's school week completed the general education teacher survey; and the surveys included information about the class, instructional practices, supports the teacher received, and perceptions of the student's performance. The telephone interviews conducted with parents and/or youth focused on family and youth characteristics, activities, experiences, and

school program satisfaction. Those who could not complete the interviews over the phone were mailed questionnaires.

All of the data from the NLTS2 questionnaires are available on the web for users to download and view in a cross-tabular format by student primary disability (National Longitudinal Transition Study 2, 2003). The current study used these data, which provides weighted percentages for youth receiving special education and generalizes to the national population.

Variables

In this study, a number of variables were selected to provide information on academic, behavioral, and mental health services, and family-oriented intervention services, as well as students' behavioral and psychological functioning. This study drew information using variables from Waves 1 and 2 of the study.

To address the first research question, the variables related to intervention services from Wave 1 included in this study are: (1a) behavior management program and (1b) behavior intervention/specialist. A behavior management program is a system designed to gather data about behaviors, to identify the function of behaviors, to establish interventions, and to monitor and manage the behaviors once interventions have been implemented (Crone & Horner, 2003). Students involved in behavior management programs received behavior interventions, which is the process of intervening to alter a behavior. The sources for the behavior management program and behavior intervention/specialist variables can be found in Appendix C.

The variables used to address the second research question include: (2a) peer tutors; (2b) tutoring by an adult; and (2c) learning strategies/study skills assistance. Peer and adult

tutoring occurs when students are instructed on previously learned materials by a peer or an adult (Rathvon, 2008). Learning strategies and study skills assistance may include strategies discussed in the literature review, such as note-taking and appropriately sequencing materials (Swanson, 1999a). The sources for the peer and adult tutoring, and learning strategies/study skills assistance variables are located in Appendix C.

To address research question number three, the following two variables were used: (3a) mental health services/personal or group counseling/therapy/psychiatric care; (3b) training/counseling/other supports or services provided to the student's family. The variable for testing 3a is one in which captures all mental health and psychiatric care provided for student by the school, which may include cognitive-behavioral therapy. Variable 3b includes any services the school provided to a student's family, which could include all family counseling or behavior/academic training for the home. The sources for these variables can be found in Appendix C.

For the fourth research question, this study used the following variables related to behavioral and psychological experiences in Wave 1: (4a) how often the student performs up to his/her ability; (4b) how often student acts impulsively; (4c) how often the student gets easily distracted; (4d) how often the student acts sad or depressed; and Wave 2: (4e) how often the student felt depressed. Questions related to these variables can be found in Appendix D.

Analytic Procedure

Research question one. In the analysis to test research question one multiple significant tests were run on Excel between weighted percentages (available on the online data tables; National Longitudinal Transition Study 2, 2003), in which the squared difference

between two proportions is divided by the sum of the two square standard errors and examined based on the critical values related to the t distribution (Blackorby and Wagner, 1996). This significance test was developed to be used with weighted proportions, such as those found in NLTS2 and was used by Blackorby and Wagner in 2006 on the first NLTS data set. These significance tests compared the weighted percentages between the ED and SLD groups, the ED and OHI groups, and the OHI and SLD groups where respondents answered “yes” on the following behavioral variables: (1a) behavior management program; and (1b) behavior intervention/specialist. Therefore, a total of six significance tests were performed to answer question one.

Research question two. For research question two, significance tests (Blackorby & Wagner, 1996), as described in the first question, were conducted on the weighted percentages between the ED and SLD groups, the ED and OHI groups, and the SLD and OHI groups where respondents answered “yes” on the following academic service variables: (2a) peer tutors; (2b) tutoring by an adult; (2c) learning strategies/study skills assistance. Therefore, a total of nine significant tests were performed to answer question two.

Research question three. To address research question number three, significance tests, as described in the previous questions (Blackorby & Wagner, 1996), were conducted using the weighted percentages between the ED and SLD groups, the ED and OHI groups, and the SLD and OHI groups, where respondents answered “yes” on the following mental health service variables: (3a) mental health services/personal or group counseling/therapy/psychiatric care; (3b) training/counseling/other supports or services provided to the student’s family. Therefore a total of six significant tests were performed to answer question three.

Research question four. For research question number four, significance tests (Blackorby and Wagner, 1996), as described in the previous questions, were conducted on the weighted percentages between the ED and SLD groups and the ED and OHI groups for respondents who answered “almost always” to: (2a) how often the student performs up to his/her ability; “very often” to: (2b) how often student acts impulsively; (2c) how often the student gets easily distracted; (2d) how often the student acts sad or depressed; and “most of the time” to: (2e) how often the student felt depressed. Both the special education and general education teachers provided answers for questions 2a to 2d, yielding a total of 18 significant tests to answer question four.

CHAPTER 4

RESULTS

Research Question 1

Multiple significance tests between weighted percentages were conducted to determine if students served under the ED and OHI categories receive similar rates of behavioral interventions. The results indicated that students identified with ED and OHI did not receive similar rates of behavioral services. Instead, students under the ED category had behavior management programs and received behavior interventions and/or specialists at significantly higher rates than their peers in the OHI category. Results of the analysis are presented in Table 2.

In addition, multiple significance tests between weighted percentages were conducted to determine if students in the ED and OHI categories received significantly more behavioral interventions than their peers with SLD. Findings suggested students in both the ED and OHI categories were significantly more involved with a behavior management program and received significantly higher rates of behavior interventions than their peers with SLD. Results are presented in Table 2.

Table 2. Behavior Intervention Services

Behavior Intervention	Percentage With Form of Intervention during Wave 1			Difference between ED and SLD	Difference between ED and OHI	Difference between OHI and SLD
	ED	SLD	OHI			
Behavior management program	55.0	5.9	14.1	126.49***	77.27***	9.48**
Behavior intervention/specialist	49.6	7.2	14.9	84.09***	49.65***	6.85**

** $p < .01$, *** $p < .001$

Research Question 2

The second research question focused on whether students in the SLD category received higher rates of academic interventions compared to their peers in the ED and OHI categories. Multiple significance tests between weighted proportions were conducted on all academic interventions (peer tutoring, adult tutoring, and learning strategies/study skills assistance), with no significant differences resulting between the ED, OHI, or SLD groups (Table 3). Review of the data indicated participants in the SLD category had higher rates of receiving peer tutoring (9.6%) and tutoring by an adult (12.4%) compared to their peers in the ED (8.4% and 8.2%, respectively) and OHI (6.4% and 8.7%, respectively) categories, but the difference was not significant.

Table 3. Academic Intervention Services

Academic Interventions	Percentage With Form of Intervention during Wave 1			Difference between ED and SLD	Difference between ED and OHI	Difference between OHI and SLD
	ED	SLD	OHI			
Peer tutors	8.4	9.6	6.4	0.16	0.51	1.66
Tutoring by an adult	8.2	12.4	8.7	1.82	0.03	1.79
Learning strategies/study skills assistance	30.9	32	33.5	0.05	0.29	0.13

Research Question 3

The third research question was designed to test for differences between groups in the frequency of mental health interventions. The results of multiple significance tests between weighted percentages are presented in Table 4. The results indicated students identified with ED received significantly more mental health services/personal or group counseling from their schools compared to their peers in the OHI and SLD categories. However, no significant differences were observed between the ED group and the OHI and SLD groups on the training/counseling/other supports provided to the student's families. A review of the data indicated that the families of students in the ED category received a higher percentage of training/counseling/other supports (11.1%) than the families of students served under ADHD (6.8%) and SLD (6.3%), but these differences were not significant.

With regard to the second part of question three comparing rates of mental interventions received by students with OHI and their peers under the SLD category, no significant differences were found (Table 4). Students in the OHI category received slightly

more mental health services (16.9%) than their peers in the SLD category (15.2%), but the difference was not significant.

Table 4. Mental Health Intervention Services

Mental Health Interventions	Percentage With Form of Intervention during Wave 1			Difference between ED and SLD	Difference between ED and OHI	Difference between OHI and SLD
	ED	SLD	OHI			
Mental health services/ personal or group counseling	48.9	15.2	16.9	45.91***	41.39***	0.23
Training/ counseling/ other supports	11.1	6.3	6.8	2.15	1.72	0.04

*** $p < .001$

Research Question 4

The fourth research question was designed to test for differences in student functioning based on ratings by special education and general education teachers. The data are presented in Tables 5 and 6, respectively, indicating that special education and general education teachers reported students with ED to have significantly lower rates of performing up to their ability almost always, compared to their peers in the SLD and OHI categories.

With regard to behavior related to impulsivity and distraction, special and general education teachers reported that significantly more students in the ED category very often were impulsive and distracted compared to their peers in the SLD category. There were no significant differences in the special and general education teacher's reports of students with

ED and OHI being impulsive or distracted. Special and general education teachers reported students in the ED category to have higher rates of being impulsive (38.2% and 20.4%, respectively) than their peers with OHI (26.8% and 15.8%, respectively), but these differences were not significant (Tables 5 and 6).

Table 5. Special Education Teacher's report of Student Functioning

Special Education Teacher rating of Student Functioning	Percentage That Responded "Almost Always" or "Very Often"				
	ED	SLD	OHI	Difference between ED and SLD	Difference between ED and OHI
Perform up to ability	14.7	29.5	25.1	8.93**	4.68*
Acts impulsively	38.2	14.9	26.8	18.14***	3.78
Gets distracted	46.2	30.1	46	7.20**	0.00
Acts sad/depressed	23.2	8.5	8.5	9.98**	9.98**

* $p < .05$, ** $p < .01$, *** $p < .001$

Concerning emotional functioning, specifically being sad/depressed, special education teachers reported students identified with ED very often being sad/depressed significantly more than students with SLD and OHI. In contrast, general education teachers reported students in the ED category very often being sad/depressed only significantly more than the SLD category, not students with OHI. According to general education teachers, students in the ED group had higher rates (14.5%) than their peers with OHI (7%) of very often being sad/depressed; however, these differences were not significant (Table 6).

Table 6. General Education Teacher's report of Student Functioning

General Education Teacher rating of Student Functioning	Percentage That Responded "Almost Always" or "Very Often"			Difference between ED and SLD	Difference between ED and OHI
	ED	SLD	OHI		
Perform up to ability	13.3	32.4	23.5	12.86***	3.94*
Acts impulsively	20.4	7.6	15.8	5.85*	0.69
Gets distracted	39.0	23.1	33.8	5.85*	0.60
Acts sad/depressed	14.5	4.6	7.0	4.66*	2.55

* $p < .05$, *** $p < .001$

Self-report of emotional functioning is presented in Table 7. There were no significant differences observed between students with ED, SLD, and OHI on students' report of feeling depressed "most of the time."

Table 7. Student Self-Report of Functioning

Self-report of Student Functioning	Percentage That Responded "Most of the Time"			Difference between ED and SLD	Difference between ED and OHI
	ED	SLD	OHI		
Student felt depressed	5.6	2.8	4.8	1.21	0.08

CHAPTER 5

DISCUSSION

The present study investigated school-based intervention services and the psychological and behavioral functioning of students with ED, OHI, and SLD. The first research question asked if students with ED and OHI received similar rates of behavioral interventions and if they had significantly higher rates than their peers served under the SLD category. The second question was if students served under SLD received academic interventions at significantly higher rates than their peers identified with ED and OHI. The third question asked if students in the ED category received mental health interventions at significantly higher rates than students with SLD and OHI, and if students with OHI received significantly less mental health interventions than their peers in the SLD category. Lastly, the fourth research question asked if the psychological and behavioral functioning of students identified with ED were significantly more impaired than that of their peers identified with SLD or OHI.

For the first research question, the statistical analysis indicated that students with ED and OHI did not receive similar rates of behavioral services, but students identified with ED received significantly more behavioral services than their peers with OHI. Also, the findings indicated that both students with ED and OHI received significantly more behavioral interventions than their peers identified with SLD. The statistical analysis for question two suggested that students in the SLD group did not receive significantly higher rates of

academic interventions. Regarding question three, the statistical analysis conducted suggests students in the ED category received significantly more mental health services than their peers with OHI and SLD, but students in the SLD group did not receive significantly more mental health services than their peers with OHI. The statistical analysis for the second research question indicates teacher reports of the functioning of students under ED were significantly more impaired than students served under SLD. Students identified with an ED appeared to be functioning more similarly to students with OHI in the area of impulsivity and distraction, but were more impaired as it relates to performance and depression.

In the following section, the research questions concerning interventions (Questions 1-3) will be discussed in relation to the findings on functioning (Question 4), as well as interpreted in relation to the existing research. Next, the study limitations will be examined. Finally, the implications and future directions for research will be considered.

Explanation of Findings

Behavioral interventions and functioning. While there is no previous literature comparing intervention services received by students with ED and OHI, it was predicted that they would receive similar rates of behavioral interventions due to: (1) the substantial number of students with ED and ADHD who exhibit behavioral difficulties (APA, 2000; Stormont, 2001; Wagner et al., 2005), (2) the fact that they receive similar types of behavior intervention services (i.e. peer-mediated interventions, self-management strategies; Joseph & Eveleigh, 2011), and (3) the similar rate at which students in ED and OHI groups in this study received medication related to behavior and mood. Similar to literature suggesting that both groups exhibit behavioral difficulties, this study found no significant differences in teacher reports of students with ED and OHI often acting distracted or impulsive. Although

the present study indicated adolescents with ED and OHI demonstrated similar patterns of distracted and impulsive behavior, the study results indicated that significantly more students in the ED category received behavioral interventions than their peers served under the OHI category. Specifically, approximately half of the students in the ED category received behavioral interventions, while approximately 15 percent of the students in the OHI category received behavioral services, indicating that there may be students in the OHI group who could benefit from behavioral services but do not receive them. Although there is no literature examining why students served under the ED category received significantly more interventions than their peers in the OHI group, their similarities in functioning and services elicit question as to why students with similar behavioral profiles are placed in distinct categories. To answer this question, three plausible reasons are explored. First, the disparity is likely related to the eligibility criterion for both groups. Next, the finding may be related to differences in the behavioral functioning of the two groups. Third, the nature of the interventions received by students with ED and ADHD may account for the difference in rates observed among the ED and OHI groups.

Although students in the ED and OHI categories exhibit a number of behavioral difficulties, the criteria to meet eligibility for special education services under the two categories are vastly different. Under the ED category students must demonstrate inappropriate types of behaviors or feelings under normal circumstances (Assistance to States for the Education of Children with Disabilities and Preschool Grants for Children with Disabilities, 2006, pg. 46756). In contrast, to be eligible for services under the OHI category, students must demonstrate that they have “limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to

the educational environment, that is due to a chronic or acute health problem, such as ADHD” (Assistance to States for the Education of Children with Disabilities and Preschool Grants for Children with Disabilities, 2006, pg. 46717). Therefore, by definition, students served under the ED category should have higher rates of behavioral difficulties and, accordingly, would require more interventions targeting behavioral issues. Additionally, it can be assumed that the students who require behavioral interventions under the OHI category have a diagnosis of ADHD. While students diagnosed with ADHD comprise the majority of individuals served under the OHI category, there are a number of other health conditions included in the OHI group (Wodrich & Spencer, 2007). As such, the disparity between the rate of students who received behavioral interventions may be accounted for by the smaller proportion of students in the OHI category who demonstrate behavioral difficulties. Interestingly, compared to the percentage of students with ADHD in the OHI category, a much smaller proportion of OHI students received behavioral interventions. Approximately 40 percent of students with ADHD were served under the OHI category, but only around 15 percent of the students in the OHI group received behavior interventions, indicating that students with ADHD may be underserved with behavioral interventions.

Even though no significant differences were found between the ED and OHI groups on the rate at which students are distracted and impulsive, the quality of disruptive behaviors among students with ED appears to be more severe. For example, the rate of suspensions and expulsions among students in the ED category is higher than students identified with ADHD (Bradley et al., 2008). Therefore, although students in the ED and OHI categories have similar rates of being distracted and acting impulsive, the behaviors of students in the ED category are likely more severe. Hence, students in the ED category likely receive higher

rates of behavioral interventions than their peers with OHI because students with ED have more demanding behavioral needs. Additionally, because the behaviors of students with ED tend to be more severe, schools' limited behavioral resources may be focused on students with ED, which in turn may overlook the needs of students with ADHD who are served under the OHI category.

Lastly, the nature of interventions received by students with ED and ADHD may account for some of the difference in the rate of behavioral interventions received by the ED and OHI groups. As discussed in the literature review, one difference in behavioral interventions is that the ED group tends to receive more behavioral interventions based on the function or cause of their behavior, while students with ADHD tend to receive more contingency management interventions (Loe & Feldman, 2007; Pelham et al., 1998). Contingency management programs are systems where a reward or consequence is contingent upon a specific appropriate behavior. Contingency management systems are often integrated into the general curriculum at the universal or whole school level, such as with positive behavior interventions and supports (Dunlap & Horner, 2006; Dunlap, Iovannone, Wilson, Kincaid, & Strain, 2010). Because most students already respond to the contingencies integrated into their classroom or school, presumably there would be a smaller percentage of students with ADHD who would require more individualized or intensive contingency plans. In contrast, students in the ED category are more likely to receive function-based interventions. Function-based interventions are developed according to the function or purpose of an individual's behavior (Gage et al., 2012). Higher rates of behavioral interventions may be observed in the ED category because they require more

intensive interventions specifically tailored to their specific needs, which are less likely to be integrated at the universal classroom level.

Academic interventions and functioning. This study asked if students in the SLD category received significantly more academic interventions than students in the ED and OHI categories, as academic concerns tend to be the central issue for students with SLD. The current study indicates that students with SLD did not receive significantly more academic interventions than students in the ED and OHI categories (i.e. peer/adult tutoring, learning strategies); instead, there are no significant differences in the rate of academic interventions received by any of the three groups of students (SLD, ED, OHI). The findings concerning academic interventions may be related to the way in which eligibility for special education services are defined. For students in any special education category, the disability, whether it is related to behaviors or a medical condition, needs to have a significant impact on the student's academic performance (IDEIA, 2004). As such, any student receiving special education services demonstrates a need for academic intervention and remediation.

Although students with ED, SLD, and OHI receive similar rates of academic interventions, the current findings indicate that students in the ED category perform up to their ability significantly less than students in the SLD and OHI groups. This is consistent with literature suggesting that students in the ED category make less academic gains than their peers with SLD and OHI, even when they have similar ability levels (Anderson et al., 2001; Bradley et al., 2008). Together, the literature and this study suggest that even though students with ED receive similar rates of academic interventions to that of their peers with SLD and OHI, they continue to demonstrate more difficulty performing up to their academic potential.

Mental health interventions and functioning. Results regarding mental health interventions and psychological functioning indicated that students in the ED category received significantly more mental health interventions than their peers in the OHI and LD groups. In addition, according to reports from general education teachers, student with ED have higher rates of often being more sad or depressed than their peers with SLD, and higher rates of appearing depressed than their peers with SLD and OHI, according to special education teachers. The finding corresponds to literature suggesting students with ED often require more mental health services and counseling because they exhibit a number of emotional, behavioral, social and adaptive complexities (Goran & Gage, 2011; Handwerk and Marshall, 1998; Lane et al., 2006; McConaughy, et al, 1994).

Interestingly, the results suggest slight differences in the reports of general education and special education teachers with regard to their students being sad or depressed. There were no significant differences in the rate at which general education teachers observed students under the ED and OHI categories often being sad or depressed; however, in contrast, there was a significantly higher rate at which special education teachers rated students with ED often being sad or depressed when compared to their peers in the OHI category. The variability in ratings may be accounted for by differences in the training and perceptions of general education and special education teachers. For example, in a study on teacher training concerning ADHD, over 75% of general education teachers reported having no, or only brief training in ADHD, while more than half of special education teachers reported receiving moderate to extensive training in ADHD (Martinussen, Tannock, & Chaban, 2011). Further, special education teachers perceived themselves to have more understanding and resources

with regard to inclusion of students with special needs than general education teachers (Buell, Hallam, Gamel-McCormick, & Scheer, 1999)

With regard to the SLD group, the results did not indicate that they receive significantly more mental health interventions than students with OHI, even though literature suggests that students with SLD are at greater risk for internalizing disorders, such as anxiety or depression (Bender & Wall; Huntington & Bender, 1993; Morrison & Cosden, 1997). While the literature does suggest that students with SLD are at risk, the NLTS2 data suggests that the proportion of students with SLD who act sad or depressed according to special and general education teachers (8.5 % and 4.6%, respectively), and the proportion who receive mental health interventions (15.2%) are relatively consistent.

Lastly, the present study found no significant differences between the ED, SLD, and OHI groups on students' report of feeling depressed. This finding aligns with research indicating that students in special education often do not report feelings of depression (Maag & Behrens, 1989a; Wagner et al., 2007).

Limitations

There are several limitations that should be considered when interpreting the results of the present study. First, the current study used an extant data set with variables that were already conceptually and operationally defined. Therefore, this limited the questions that could be posed using the data set. Second the measurement of many of the variables on a two-point scale restricted analysis to analysis of proportions. A related limitation was the use of summary data, which restricted the depth and precision of analyses, such as the connection between intervention and functioning.

Additionally, several limitations related to the NLTS-2 data set can be considered. First, information regarding students' primary and secondary disability categories was collected using the school program survey and parent interview. Individuals most knowledgeable about the student's school program, such as their special education teacher or staffing specialist, completed the school program survey (Newman et al., 2010; Wagner et al., 2005). This method of gathering information about a student's disability category leaves room for error, such as providing the wrong category or excluding a secondary category. The preferred method, which would reduce the likelihood of errors, would be to collect disability category information directly from the student's individual education plan (IEP).

Next, another limitation related to NLTS-2 are changes that have occurred in the field of special education since data collection was conducted. Data collection for NLTS-2 began in 2001 (Newman et al., 2010; Wagner et al., 2005); however the reauthorization of the Individuals Disabilities Education Act of 1997 occurred in 2004 (IDEIA). One of the more salient changes that occurred in IDEIA 2004 was that it allowed school districts to use Response to Intervention as a means of serving and identifying students with SLD (Martinez & Nellis, 2008). Following this change in IDEIA 2004, research has also begun to focus on using the RTI model for serving and identifying students with ED (Gresham, 2007). Due to the differences in the state of special education legislation during NLTS-2 data collection and now, important information regarding RTI and specific types of academic, behavioral, and mental interventions is lacking. For example, it would be helpful to know what interventions were used, and how schools measured if a student did or did not appropriately respond to the intervention. Additionally, instead of having broad categories, such as learning strategies, behavioral interventions, or mental health interventions, it would have been more useful to

have data on specific types of learning strategies (i.e. direct instruction), behavioral interventions (i.e. contingency management), and mental health interventions (i.e. CBT) that were used with the student, as well as how often the student received these specific interventions.

Although the present study was restricted in the type of analyses that could be conducted, one strength is that the data are nationally representative. Therefore, findings of the study provide information on intervention services and the functioning of students in the ED, OHI, and SLD categories across the United States. Furthermore, because nationally representative data were used, the study findings provide understanding on what the needs are for students served in the three categories across the nation.

Implications and Future Directions

Research suggests that peer-mediated interventions, such as peer-tutoring, are effective strategies to target the academic and behavioral deficits of students with ED, ADHD, and SLD. Consistent with the literature, recent findings of a meta-analysis of peer tutoring revealed that peer-tutoring is an effective interventions regardless of disability status, grade, or amount received (Bowman-Perrott, et al., 2013). Additionally, their findings suggested that students with EBD benefitted the most from peer-tutoring (Bowman-Perrott, et al., 2013). Although peer-tutoring is an effective method, it appears that teachers may not be taking advantage of this method, as this study indicated that peer tutoring was used with only about 8% of students with ED category, approximately 10% of students with SLD, and about 6% of students in the OHI category (Table 3). Future research should explore current rates at which students in these three categories are receiving peer-tutoring and other peer-

mediated interventions. In addition, future research should explore barriers to implementing peer-mediated strategies.

The current study indicated that, in general, students with ED, SLD, and OHI received services that are congruent with their academic, behavioral, and mental health needs. Based on the findings of the current study, students with ED received more mental health and behavioral services than students with SLD, as they demonstrated more deficits in psychological and behavioral functioning. Students in the OHI category received more behavioral interventions than students with SLD, which is consistent with this study's findings on students with ADHD demonstrating more difficulties with impulsive and distracted behavior. Students with ED and ADHD both demonstrated behaviors warranting the need for behavior interventions; however, students with ADHD in the OHI category appeared to be receiving significantly less behavioral services than their peers with ED. Placing students with ED and ADHD in separate categories when they have similar behavioral needs has several implications. The implications and suggestions for future directions are discussed below.

Demographic differences among students served under the ED and OHI groups present another interesting issue, as it may contribute to the stigma associated with the ED category (Burns, 1999; Heathfield & Clark, 2004; Merrell & Walker, 2004; Osher & Hanley, 1996). Information regarding descriptive statistics in Table I indicates that students with ED tend to be from lower income families and the proportion of Black students in the ED group is higher than the proportion of Black students in the OHI group. In contrast, students in the OHI group come from higher income families and demonstrate a larger proportion of White student in the OHI group than the proportion of White students in the ED group. These

demographic differences suggest that it is possible for students from higher income families to be placed in the OHI category because they have the resources to receive a medical diagnosis of ADHD. Students who have similar behavior difficulties but do not have the resources to receive a medical diagnosis may instead be placed in the ED category. There are students in the ED category who have a diagnosis of ADHD (24%), but at a smaller rate than those in the OHI category (40%). Therefore, there may be a large number of students in the ED category who have not been diagnosed with ADHD (Dietz & Montague, 2006).

Additionally, descriptive statistics in Table 1 indicate that a higher proportion of Hispanic students are represented in the SLD groups than the ED and OHI categories. Although there is no definitive answer as to why there is an overrepresentation of Hispanic students in the SLD category, it may be related to language barriers. Specifically, it is difficult for practitioners to distinguish between whether an English language learner demonstrates difficulty because of their limited proficiency in English or because they truly have a SLD (Klinger, Artiles, & Barletta, 2006). Because it is difficult to distinguish between the two, it is plausible that Hispanic students are inappropriately placed in special education under the SLD label, which in turn has developed into an overrepresentation of Hispanic students.

The disparity in family income, race, and medical diagnosis may seem insignificant because once students have met eligibility for a category, they should receive the individualized interventions, services, or accommodations they need (IDEIA, 2004). However, some have formed arguments against the use of a categorical special education system, due to the stigma associated with ED (Burns, 1999; Heathfield & Clark, 2004; Merrell & Walker, 2004; Osher & Hanley, 1996), and the overrepresentation of African

American male and low-income students in the ED category, and Hispanic students in the SLD category (Artiles, Harry, Reschly, & Chinn, 2002; Chakraborti-Ghosh, Mofield, & Orellana, 2010; Harry & Anderson, 1994; Patton, 1998; Wagner et al., 2003; Wagner et al., 2005; Zhang & Katsiyannis, 2002). The stigma associated with mental health disorders, and the pervasiveness of minority overrepresentation in special education over the decades intensifies the marginalization of disadvantaged groups within the education system.

Another disadvantage to the use of a categorical special education system is that it is strongly associated with the medical model (Forness & Kavale, 2001; Maag & Katsiyannis, 2008). For example, SLD under IDEIA aligns with Learning Disorders of the DSM-IV TR; students with mood disorders (i.e. depression, bipolar disorder, anxiety disorders) and psychotic disorders (i.e. schizophrenia) of the DSM-IV TR fall under the ED category, and the majority of students with a DSM-IV TR ADHD diagnosis fall under the OHI category (Maag & Katsiyannis, 2008). However, the correspondence between IDEIA categories and DSM-IV TR diagnoses are somewhat arbitrary. For example, students with a DSM-IV TR diagnosis of ADHD, a mental disorder, qualify for eligibility under OHI, as it is considered a chronic health condition that results in limited alertness (Assistance to States for the Education of Children with Disabilities and Preschool Grants for Children with Disabilities, 2006); and by definition students with DMS-IV TR mood and psychotic disorders also have mental health conditions that result in limited alertness but they do not qualify for eligibility under OHI. In addition, there is no empirical evidence supporting the use of the categories or the validity of its utility (Heathfield & Clark, 2004; Maag & Katsiyannis, 2008), which commonly leaves practitioners uncertain as to which eligibility category is most appropriate for a student (Allen & Hanchon, 2013; Hanchon & Allen, 2013). Further, because the

special education system is contingent upon an evolving medical and mental health system, changes in the medical and mental health fields often impact terminology and service delivery in special education. For example, as mental health providers shift from using the DSM-IV TR to using the DSM-5, professionals serving students with disabilities must anticipate how changes in terminology may impact special education (Tannock, 2013).

As the literature and this study suggest, students within the ED, SLD, and OHI categories are heterogeneous, and therefore interventions often provided for one group may also be indicated for another eligibility category, based upon student's individual needs (Powell, 2010). As a result, alternative paradigms that counter the use of a categorical special education system have been posed; much of which emphasizes prioritizing the services and interventions provided to students with special needs (Heathfield & Clark, 2004; Maag & Katsiyannis, 2008; Powell, 2010). Leaders in the field of special education suggest using Response to Intervention (RTI), a model that many states have adopted to make SLD and ED eligibility decisions (Gresham, Hunter, Corwin, & Fischer, 2013; Lindstron & Sayeski, 2013; Maag and Katsiyannas, 2008). RTI is a multi-tier progress monitoring and prevention system that aims to provide evidence-based instruction and interventions that are culturally and linguistically sensitive. The first tier, Universal Support, includes universal screening and school-wide prevention and behavior supports. Typically 80 to 85% of students are expected to make adequate academic and behavioral progress within the Universal Support tier. The students who demonstrate academic and behavioral difficulties receive Targeted Support at the second tier. Interventions within this tier may involve small reading groups or group counseling. The expectation is that 5 to 15% of students will respond to academic and behavioral expectations within this tier. The third tier is where

approximately 3-5% of students will require intensive individualized support, often in the form of a special education individualized education plan (IEP; Gresham et al., 2013; Lindstrom & Sayeski, 2013; Maag & Katsiyannis, 2008; Merrell & Walker, 2004).

RTI provides a structure for providing evidence-based interventions corresponding to students' needs, which complements another system used to inform intervention; the *International Classification of Functioning, Disability, and Health for Children and Youth* (ICF-CY; WHO, 2007). The ICF-CY is based on a biopsychosocial model whereby practitioners consider a child's functioning and disability within a multifaceted framework that includes four elements: body functions, body structures, activities and participation, and environmental factors (Simeonsson, 2009; Simeonsson & Lee, 2013). The ICF-CY provides a framework for practitioners to document the characteristics of students as a way to promote and inform intervention. In addition, it is a tool that can be used internationally and used as a universal language to describe disability; in contrast to disjointed definitions used across IDEIA, 2004 or the DSM-IV TR. It would be a useful tool for school professionals to use as they prepare to describe a student's functional limitations and develop interventions to promote functioning. In 2008, Portugal moved from the medical model of special education to a new law requiring the use of the ICF-CY in the development of an IEP, which was met with much resistance and confusion (Miranda-Correira, 2010). Currently the inclusion of the ICF-CY in the Portuguese education law provides evidence suggesting that using the ICF-CY as part of special education eligibility or development of an IEP is feasible (Sanches-Ferreira, et al, 2012). The ICF-CY has not been implemented officially in the US, but its use can prompt school professionals to strongly consider the biopsychosocial definition of disability,

as well as encouraging them to develop interventions specifically related to assessment findings.

With regard to the ED and OHI categories, future research should examine the similarities and differences between students with ADHD served under the ED category and students with ADHD served under the OHI category. Comparing and contrasting their behavioral and psychological functioning, as well as the interventions provided to these students, should be explored. Finally, in that this study found that students within the ED and OHI categories had similar rates of being distracted and impulsive, but with students with ED receiving more behavioral interventions, a priority for future research would be to examine if students served under the OHI category also have a greater need for behavioral interventions.

If another research study like NLTS-2 were to be conducted in the future, the study should examine special education students within an RTI lens, especially with regard to the ED and SLD categories. Specifically, data collected should include: (1) what specific interventions (i.e. token economy, CBT) were used and provided to students before they were identified for special education, (2) who implemented the interventions, and (3) the amount of time the students received the interventions. Additionally, the same information should be collected for students after they have been identified for special education. Finally, data sources should continue to include school program surveys; however, RTI and IEP documentation should also be collected as a means of providing definitive data.

The current study found that mental health and behavior interventions for students with disabilities are associated with their disability category; however, academic interventions were received by all three categories examiner and behavioral interventions

were largely provided to students under the ED and OHI categories, indicating that not one single type of intervention fits every individual in a given category. To this end, as special education continues to move into the era of RTI and other tiered support systems, future research should investigate the extent to which school psychologists and members of the RTI problem-solving teams view a student beyond a disability label or category and focus on assessment of a child's functional strengths and limitations that directly informs individualized interventions. Furthermore, research should examine the extent to which RTI and biopsychosocial paradigms reduce the overrepresentation of minority groups in special education.

In addition to the problem of providing interventions on the basis of categories, the overrepresentation of minority students in special education has been continuous, indicating a need for research on the impact of cultural competency and diversity training for school psychologists and other professionals working with students. This approach may not only promote a non-categorical view of children with disabilities but also address the problem of overrepresentation of minority children. School psychologists play a vital role in the process of identifying a student for special education, in that assessments with children need to be approached in a culturally competent and sensitive manner. This calls for school psychologists and other professionals to be sensitive to a student's home and school environment, language, and cultural norms when assessing for strengths and limitations. As school psychologists and other professionals gain these skills, there is continued need for research to identify effective interventions for students in special education.

Appendix A:

Student Characteristics

Item Number	Source	Question	Scaling of Response	Wave	Data Tables Path
3	Family/Parent Interview	Is this youth of Hispanic, Latino, or other Spanish origin	1. Yes 2. No	1	Wave 1 (2001) Parent Survey → Characteristics of Youth → Ethnicity (youth)
4	Family/Parent Interview	Which of the following categories best describe this youth?	1. White 2. African American or Black 3. Asian Indian or Alaska Native: 4. Asian: 5. Native Hawaiian or Other Pacific Islander: 6. Other race or ethnicity. Please describe.	1	Wave 1 (2001) Parent Survey → Characteristics of Youth → Ethnicity (youth)
5	Family/Parent Interview	Is this youth male or female?	1. Male 2. Female	1	Wave 1 (2001) Parent Survey → Characteristics of Youth → Gender (youth)
B7B	Family/Parent Interview	Is he/she now taking any prescription medicine for a condition or problem related to his/her disability or special need?	1. Yes 2. No -7. Refused -8. Don't know	1	Wave 1 (2001) Parent Survey → Health → Health (currently takes a prescription medication related to a disability)

Item Number	Source	Question	Scaling of Response	Wave	Data Tables Path
D2a and D2b	School Program Survey	<p>In column A, please mark all of the student's disabilities.</p> <p>In column B, please mark the student's primary disability.</p>	<ol style="list-style-type: none"> 1. Autism 2. Attention deficit disorder (ADD)/attention deficit hyperactivity disorder (ADHD) 3. Deafness 4. Hearing impairment 5. Deaf-blindness 6. Developmental delay 7. Serious emotional disturbance/behavior disorder 8. Learning disability 9. Mild mental retardation 10. Moderate/severe mental retardation 11. Multiple disabilities 12. Orthopedic impairment 13. Other health impairment 14. Speech or language impairment 15. Traumatic brain injury 16. Visual impairment/blindness 	1	Wave 1 Student School Program Survey → Special Education → Disabilities of youth with IEP/504 Plan

Appendix B:

Family and School Characteristics

Item Number	Source	Question	Scaling of Response	Wave	Data Tables Path
1	Family/ Parent Interview	In the past year, has this youth lived with you all the time?	1. Yes 2. No	1	Wave 1 (2001) Parent Survey → Characteristics of Youth → Living situation (where youth currently lives)
2	Family/ Parent Interview	Where else has he/she lived in the past year?	1. With his/her (other) parent(s) 2. With another relative 3. In foster care 4. In a residential or boarding school 5. In a group home or other assisted living center: 6. In a hospital, medical facility, convalescent hospital, or institution for persons with disabilities: 7. In a mental health facility 8. In a correctional facility or youth detention center 9. Other	1	Wave 1 (2001) Parent Survey → Characteristics of Youth → Living situation (where youth currently lives)

Item Number	Source	Question	Scaling of Response	Wave	Data Tables Path
36	Family/ Parent Interview	What was your household income this past year?	<ol style="list-style-type: none"> 1. Less than \$25,000 2. \$25,001 - \$50,000 3. \$50,001 - \$75,000 4. More than \$75,000 	1	Wave 1 (2001) Parent Survey → Household Characteristics → Income (respondent household income categories)
13	Family/ Parent Interview	Which of the following best describes the school this youth attended LAST year? (If he/she attends more than one school, describe the one where he/she spends the most time.) Please circle ONE number.	<ol style="list-style-type: none"> 1. A regular school that serves a wide variety of students 2. A school that serves only students with disabilities 3. A school that specializes in a particular subject area or theme, sometimes called a magnet school 4. A vocational-technical school 5. A charter school 6. An alternative school 7. Homebound instruction by public school personnel 8. Home schooled by parent or other non-public-school personnel 9. School in a hospital, medical, or convalescent facility, or institution for persons with disabilities 10. School in a mental health facility 11. School in a juvenile justice facility, youth detention center, or other correctional facility 12. Another kind of school. Please describe. 	1	Wave 1 (2001) Parent Survey → Secondary School Enrollment → Type (type of school attended)

Item Number	Source	Question	Scaling of Response	Wave	Data Tables Path
A3	School Program Survey	<p>Please indicate all settings in which this student is now taking each subject listed below.</p> <p>PLEASE MARK ALL THAT APPLY ON EACH LINE.</p> <p>MARK NOT APPLICABLE IF STUDENT DOES NOT TAKE A SUBJECT</p> <p>a. Language arts</p> <p>b. Mathematics</p>	<ul style="list-style-type: none"> • General education classroom • Special education classroom • Individual instruction (e.g., home/hospital) • Community setting • Not applicable 	1	<p>Wave 1 Student School Program Survey →</p> <p>Instructional settings →</p> <p>Instructional settings for language arts</p> <p>→ Instructional settings for mathematics</p>

Appendix C:

Academic, Behavior, and Mental Health Interventions

Item Number	Source	Question	Scaling of Response	Wave	Data Tables Path
D3	School Program Survey	Which of the following are provided to this student as part of his/her IEP or 504 plan? Please Mark All That Apply	<ol style="list-style-type: none"> 1. Peer tutors 2. Tutoring by an adult 3. Behavior management program 4. Learning strategies/study skills assistance 	1	Wave 1 Student School Program Survey → Special education → Supports and assistance on IEP/504 plan
D7d	School Program Survey	<p>Which of the following services has been provided to this student from or through the school system during this school year (including services the school contracted from other agencies). Please mark ONE box on Each line.</p> <p>d. Behavior intervention/specialist</p> <p>h. Mental health services, personal/group counseling, therapy, or psychiatric care</p> <p>p. Training, counseling, or other supports/services provided to student's family</p>	<ol style="list-style-type: none"> 1. Yes 2. No 3. Don't Know 	1	<p>Wave 1 Student School Program Survey → Supports and services → Behavioral intervention services provided</p> <p>→ Mental health services provided</p> <p>→ Training, counseling, family support services provided to the family</p>

Appendix D:

Behavioral and Psychological Experiences

Item Number	Source	Question	Scaling of Response	Wave	Data Tables Path
D17	School Program Survey	Please indicate how often this student does each of the following in this class. Please Mark Only ONE Box on EACH Line.	1. Never 2. Sometimes 3. Very Often 4. Don't Know	1	Wave 1 Student School Program Survey → Special education classroom experiences → How often youth acts impulsively in special ed class
C2	General Teacher Survey	c. Act impulsively e. Get easily distracted f. Act sad or depressed			→ How often youth gets easily distracted in special ed class → How often youth acts sad or depressed in special ed class Wave 1 Teacher Survey → Student behaviors → How often student acts impulsively → How often student gets easily distracted → How often student acts sad or depressed

Item Number	Source	Question	Scaling of Response	Wave	Data Tables Path
D19 C6	School Program Survey General Education Teacher Survey	How often does this student do each of the following in this class? e. Perform up to his or her ability	1. Rarely 2. Sometimes 3. Frequently 4. Almost Always 5. No applicable	1	Wave 1 Student School Program Survey → Special education classroom experiences → How often youth performs up to ability in special ed class Wave 1 Teacher Survey → Student performance → How often student works to best of ability
A16	Youth Survey	How often did you feel each of the following during the last week? Please Mark (X) One box on Each Line c. You felt depressed	1. Never or Rarely 2. Sometimes 3. A lot of the time 4. Most of the time	2	Wave 2 (2003) Parent/Youth Survey → Social Involvement → Depressed (how often youth feels depressed)

REFERENCES

- Abikoff, H. (1991). Cognitive training in ADHD children: Less to it than meets the eye. *Journal of Learning Disabilities*, 24, 205-209. doi: 10.1177/002221949102400404
- Achilles, G. M., McLaughlin, M. J., & Croninger, R. G. (2007). Sociocultural correlates of disciplinary exclusion among students with emotional, behavioral, and learning disabilities, in the SEELS national dataset. *Journal of Emotional and Behavioral Disorders*, 15 (1), 33-45. doi: 10.1177/10634266070150010401
- Allen, R. A., & Hanchon, T. A. (2013). What can we learn from school-based emotional disturbance assessment practices? Implications for practice and preparation in school psychology. *Psychology in the Schools*, 50(3), 290-299. doi: 10.1002/pits.21671
- Allen-Meares, P. (1991). A study of depressive characteristics in behaviorally disordered children and adolescents. *Children and Youth Services Review*, 13, 271-286. doi: 10.1016/0190-7409(91)90064-O
- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.-text revision). Washington, DC: Author.
- Anderson, J. A., Kutash, K., & Duchnowski, A. J. (2001). A comparison of the academic progress of students with ED and students with LD. *Journal of Emotional and Behavioral Disorders*, 9 (2), 106-115. doi: 10.1177/106342660100900205
- Ardoin, S. P., & Martens, B. K. (2004). Training children to make accurate self-evaluation: Effects on behavior and the quality of self-ratings. *Journal of Behavioral Education*, 1, 1-23. doi: 10.1023/B:JOBE.0000011257.63085.88
- Armbruster, P., & Lichtman, J. (1999). Are school based mental health services effective? Evidence from 36 inner city schools. *Community Mental Health Journal*, 35 (6), 493-504. doi: 10.1023/A:1018755100381
- Artiles, A. J., Harry, B., Reschly, D. J., & Chinn, P. C. (2002). Over-identification of students of color in special education: A critical overview. *Multicultural Perspectives*, 4(1), 3-10. doi: 10.1207/S15327892MCP0401_2
- Assistance to States for the Education of Children with Disabilities and Preschool Grants for Children with Disabilities, 71 C. F. R. § 300.8 (2006).
- Atkins, M. S., Frazier, S. L., Birman, D., Adil, J. A., Jackson, M., Graczyk, P. A., et al. (2006). School-based mental health services for children living in high poverty urban communities. *Administration and Policy in Mental Health and Mental Health Services Research*, 33 (2), 146-159. doi: 10.1007/s10488-006-0031-9

- Atkins, M. S., Graczyk, P. A., Frazier, S. L., & Abdul-Adil, J. (2003). Toward a new model for promoting urban children's mental health: Accessible, effective, and sustainable school-based mental health services. *School Psychology Review, 32* (4), 503-514.
- Azrin, N. H., Vinas, V., & Ehle, C. T. (2007). Physical activity as a reinforcement for classroom calmness of ADHD children: A preliminary study. *Child & Family Behavior Therapy, 29*(2), 1-8. doi: 10.1300/J019v29n02_01
- Barkley, R. A., Fischer, M., Smallish, L., & Fletcher, K. (2002). The persistence of attention-deficit/hyperactivity disorder into young adulthood as a function of reporting source and definition of disorder. *Journal of Abnormal Psychology, 111*, 279-289. doi: 10.1037/0021-843X.111.2.279
- Barton-Arwood, S. M., Wehby, J. H., & Falk, K. B. (2005). Reading instruction for elementary-age students with emotional and behavioral disorders: Academic and behavioral outcomes. *Exceptional Children, 72* (1), 7-27.
- Bender, W. N. & Wall, M. E. (1994). Social-emotional development of students with learning disabilities. *Learning Disability Quarterly, 17*(4), 323-341. doi: 10.2307/1511128
- Benner, G. J., Nelson, J. R., & Epstein, M. H. (2002). Language skills of children with ED: A literature review. *Journal of Emotional and Behavioral Disorders, 10* (1), 43-59. doi: 10.1177/106342660201000105
- Berthiaume, K. S. (2006). Story comprehension and academic deficits in children with attention deficit hyperactivity disorder: What is the connection? *School Psychology Review, 35*(2), 309-323.
- Blackorby, J., & Wagner, M. (1996). Longitudinal postschool outcomes of youth with disabilities: Findings from the National Longitudinal Transition Study. *Exceptional Children, 62*(5), 399-413.
- Bowman-Perrott, L., Davis, H., Vannest, K., Williams, L., Greenwood, C., & Parker, R. (2013). Academic benefits of peer tutoring: A meta-analytic review of single-case research. *School Psychology Review, 42*(1), 39-55.
- Boyle, J. R., & Rivera, T. Z. (2012). Note-taking techniques for students with disabilities: A systematic review of the research. *Learning Disability Quarterly, 35*(5), 131-143. doi: 10.1177/0731948711435794
- Bradley, R., Doolittle, J., & Bartolotta, R. (2008). Building on the data and adding to the discussion: The experiences and outcomes of students with emotional disturbance. *Journal of Behavioral Education, 17*, 4-23. doi: 10.1007/s10864-007-9058-6
- Browder, D. M., & Cooper-Duffy, K. (2003). Evidence-based practices for students with severe disabilities and the requirement for accountability in "No Child Left Behind."

- The Journal of Special Education*, 37(3), 157-163. doi: 10.1177/00224669030370030501
- Bruck, M. (1987). The adult outcomes of children with learning disabilities. *Annals of Dyslexia*, 37, 252-263. doi: 10.1007/BF02648071
- Bruns, E. J., Walrath, C., Glass-Siegel, M., & Weist, M. D. (2004). School-based mental health services in Baltimore: Association with school climate and special education referrals. *Behavior Modification*, 28 (4), 491-512. doi: 10.1177/0145445503259524
- Buell, M. J., Hallam, R., Gamel-McCormick, M., & Scheer, S. (1999). A survey of general and special education teachers' perceptions and inservice needs concerning inclusion. *International Journal of Disability, Development and Education*, 46(2), 143-156. doi: 10.1080/103491299100597
- Burns, B. J. (1999). A call for a mental health services research agenda for youth with serious emotional disturbance. *Mental Health Services Research*, 1(1), 5-20. doi: 10.1023/A:1021927100830
- Bussing, R., Porter, P., Zima, B. T., Mason, D., Garvan, C., & Reid, R. (2012). Academic outcome trajectories of students with ADHD: Does exceptional education status matter? *Journal of Emotional and Behavioral Disorders*, 20(3), 131-143. doi: 10.1177/1063426610388180
- Bussing, R., Zima, B. T., & Perwien, A. R. (2000). Self-esteem in special education children with ADHD: Relationship to disorder characteristics and medication use. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39(10), 1260-1269. doi: 10.1097/00004583-200010000-00013
- Chakraborti-Ghosh, S., Mofield, E., & Orellana, K. (2010). Cross-cultural comparisons and implications for students with EBD: A decade of understanding. *International Journal of Special Education*, 25(2), 162-170.
- Chan, L. K. S., & Cole, P. G. (1986). The effects of comprehension monitoring training on the reading competence of learning disabled and regular class students. *Remedial and Special Education*, 7, 33-40. doi: 10.1177/074193258600700407
- Chan, L. K. S., Cole, P. G., & Barfett, S. (1987). Comprehension monitoring: Detection and identification of text inconsistencies by learning disabled and normal students. *Learning Disability Quarterly*, 10, 114-124. doi: 10.2307/1510218
- Chandler, H. N., & Jones, K. (1983). Learning disabled or emotionally disturbed: Does it make any difference? Part 1. *Journal of Learning Disabilities*, 16, 432-434. doi: 10.1177/002221948301600714

- Chandler, H. N., & Jones, K. E. (1983). Learning disabled or emotionally disturbed: Does it make any difference? Part II. *Journal of Learning Disabilities*, 16, 561-564. doi: 10.1177/002221948301600914
- Chard, D. J., Vaughn, S., & Tyler, B. (2002). A synthesis of research on effective interventions for building reading fluency with elementary students with learning disabilities. *Journal of Learning Disabilities*, 35(5), 386-406. doi: 10.1177/00222194020350050101
- Chronis, A. M., Jones, H. A., & Raggi, V. L. (2006). Evidence-based psychosocial treatments for children and adolescents with attention-deficit/hyperactivity disorder. *Clinical Psychology Review*, 26, 486-502. doi: 10.1016/j.cpr.2006.01.002
- Clarfield, J., & Stoner, G. (2005). The effects of computerized reading instruction on the academic performance of students identified with ADHD. *School Psychology Review*, 34, 246-254.
- Cole, C. L. (1992). Self-management intervention in the schools. *School Psychology Review*, 21, 188-192.
- Cook, C. R., Gresham, F. M., Kern, L., Barreras, R. B., Thorton, S., & Crews, S. D. (2008). Social skills training for secondary students with emotional and/or behavioral disorders: A review and analysis of the meta-analytic literature. *Journal of Emotional and Behavioral Disorders*, 16 (3), 131-144. doi: 10.1177/1063426608314541
- Costenbader, V., & Buntaine, R. (1999). Diagnostic discrimination between social maladjustment and emotional disturbance: An empirical study. *Journal of Emotional and Behavioral Disorders*, 7 (1), 2-10. doi: 10.1177/106342669900700101
- Crone, D. A., Horner, R. H. (2003). *Building positive behavior suport systems in schools: Functional behavioral assessment*. New York, NY: The Guilford Press.
- Cullinan, D., & Sabornie, E. J. (2004). Characteristics of emotional disturbance in middle and high school students. *Journal of Emotional and Behavioral Disorders*, 12, 157-167. doi: 10.1177/10634266040120030301
- Cullinan, D., Schloss, P. J., & Epstein, M. H. (1987). Relative prevalence and correlates of depressive characteristics among seriously emotionally disturbed and nonhandicapped students. *Behavioral Disorders*, 12, 90-98.
- Daley, D., & Birchwood, J. (2009). ADHD and academic performance: Why does ADHD impact academic performance and what can be done to support ADHD children in the classroom? *Child: Care, Health and Development*, 36(4), 455-464. doi: 10.1111/j.1365-2214.2009.01046.x

- Daniel, L. G., & King, D. A. (1997). Impact of inclusion education on academic achievement, student behavior and self-esteem and parental attitudes. *The Journal of Educational Research*, 91 (2), 67-80. doi: 10.1080/00220679709597524
- Davies, S., & Witte, R. (2000). Self-management and peer-monitoring within a group contingency to decrease uncontrolled verbalizations of children with attention-deficit/hyperactivity disorder. *Psychology in the Schools*, 37(2), 135-147. doi: 10.1002/(SICI)1520-6807(200003)37:2<135::AID-PITS5>3.0.CO;2-U
- Dietz, S., & Montague, M. (2006). Attention deficit hyperactivity disorder comorbid with emotional and behavioral disorders and learning disabilities in adolescents. *Exceptionality*, 14(1), 19-33. doi: 10.1207/s15327035ex1401_3
- Dobson, K. S. (Ed.) (2010). *Handbook of cognitive-behavioral therapies: Third edition*. New York, NY: The Guilford Press.
- Duncan, B. B., Forness, S. R., & Hartsough, C. (1995). Students identified as seriously emotionally disturbed in school-based day treatment: Cognitive, psychiatric, and special education characteristics. *Behavioral Disorders*, 20, 238-252.
- Dunlap, G., & Horner, R. H. (2006). The applied behavior analytic heritage of PBS: A dynamic model of action-oriented research. *Journal of Positive Behavior Interventions*, 2006, 8, 58-60. doi: 10.1177/10983007060080010701
- Dunlap, G., Iovannone, R., Wilson, K. J., Kincaid, D. K., & Strain, P. (2010). Prevent-teach-reinforce: A standardized model of school-based behavioral intervention. *Journal of Positive Behavior Interventions*, 12(1), 9-22. doi: 10.1177/1098300708330880
- DuPaul, G. J. (2007). School-based interventions for students with attention deficit hyperactivity disorder: Current status and future directions. *School Psychology Review*, 36(2), 183-194.
- DuPaul, G. J., & Eckert, T. L. (1997). The effects of school-based interventions for attention deficit hyperactivity disorder: A meta-analysis. *School Psychology Review*, 26(1), 5-27.
- DuPaul, G. J., Eckert, T. L., & Vilaro, B. (2012). The effects of school-based interventions for attention deficit hyperactivity disorder: A meta-analysis 1996-2010. *School Psychology Review*, 41(4), 387-412.
- DuPaul, G. J., Ervin, R. A., Hook C. L. L., & McGoey, K. E. (1998). Peer tutoring for children with attention deficit hyperactivity disorder: Effects on classroom behavior and academic performance. *Journal of Applied Behavior Analysis*, 31, 579-592. doi: 10.1901/jaba.1998.31-579

- DuPaul, G. J., & Ervin, R. A. (1996). Functional assessment of behaviors related to attention-deficit/hyperactivity disorder: Linking assessment to intervention design. *Behavior Therapy*, 27, 601-622. doi: 10.1016/S0005-7894(96)80046-3
- DuPaul, G. J., Kern, L., Volpe, R., Caskie, G. I. L., Sokol, N., Arbolino, L., Brakle, J. V., & Pipan, M. (2013). Comparison of parent education and functional assessment-based intervention across 24 months for young children with attention deficit hyperactivity disorder. *School Psychology Review*, 42(1), 56-75.
- DuPaul, G. J., & Weyandt, L. L. (2006). School-based intervention for children with attention deficit hyperactivity disorder: Effects on academic, social, and behavioural functioning. *International Journal of Disability, Development and Education*, 53, 161-176. doi: 10.1080/10349120600716141
- Elementary and Secondary Education Amendments Act of 2011. (2011). In www.GovTrack.us. Retrieved May 12, 2013, from <http://www.govtrack.us/congress/bills/112/s157>
- Elbaum, B., & Vaughn, S. (2001). School-based interventions to enhance the self-concept of students with learning disabilities: A meta-analysis. *The Elementary School Journal*, 101(3), 303-329. doi: 10.1086/499670
- Elbaum, B., & Vaughn, S. (2003). For which students with learning disabilities are self-concept interventions effective? *Journal of Learning Disabilities*, 36(2), 101-108. doi: 10.1177/002221940303600203
- Ervin, R. A., DuPaul, G. J., Kern, L., & Friman, P. C. (1998). Classroom-based functional and adjunctive assessments: Proactive approaches to intervention selection for adolescents with attention deficit hyperactivity disorder. *Journal of Applied Behavior Analysis*, 31, 65-78. doi: 10.1901/jaba.1998.31-65
- Ervin, R. A., Kern, L., Clarke, S., DuPaul, G. J., Dunlap, G., & Friman, P. C. (2000). Evaluating assessment-based intervention strategies for students with ADHD and comorbid disorders within the natural classroom context. *Behavioral Disorders*, 25(4), 344-358.
- Fabiano, G. A., Vujnovic, R. K., Pelham, W. E., Waschbusch, D. A., Massetti, G. M., Pariseau, M. E., Naylor, J., Yu, J., Robins, M., Carnefix, T., Greiner, A. R., & Volker, M. (2010). Enhancing the effectiveness of special education programming for children with attention deficit hyperactivity disorder using a daily report card. *School Psychology Review*, 39(2), 219-239.
- Flaherty, L. T., & Weist, M. D. (1999). School-based mental health services: The Baltimore models. *Psychology in the Schools*, 36 (5), 379-389. doi: 10.1002/(SICI)1520-6807(199909)36:5<379::AID-PITS2>3.0.CO;2-D

- Forness, S. R., & Kavale, K. A. (1996). Treating social skill deficits in children with learning disabilities: A meta-analysis of the research. *Learning Disability Quarterly*, 19(1), 2-13. doi: 10.2307/1511048
- Forness, S. R., & Kavale, K. A. (2001). ADHD and a return to the medical model of special education. *Education and Treatment of Children*, 24, 224-247
- Fourqurean, J. M., Meisgeier, C., Swank, P. R., Williams, R. E. (1991). Correlates of postsecondary employment outcomes for young adults with learning disabilities. *Journal of Learning Disabilities*, 24, 400-405. doi: 10.1177/002221949102400704
- Fowler, S. A. (1986). Peer-monitoring and self-monitoring: Alternatives to traditional teacher management. *Exceptional Children*, 52(6), 573-581.
- Gage, N. A., Lewis, T. J., & Stichter, J. P. (2012). Functional behavioral assessment-based interventions for students with or at risk for emotional and/or behavioral disorders in school: A hierarchical linear modeling meta-analyses. *Behavioral Disorders*, 37(2), 55-77.
- Gaub, M., & Carlson, C. L. (1997). Behavioral characteristics of DSM-IV ADHD subtypes in a school-based population. *Journal of Abnormal Child Psychology*, 25, 103-111. doi: 10.1023/A:1025775311259
- Gerber, P. J. (2012). The impact of learning disabilities on adulthood: A review of the evidenced-based literature for research and practice in adult education. *Journal of Learning Disabilities*, 45(1), 31-46. doi: 10.1177/0022219411426858
- Gerster, R., & Baker, S. (2001). Teaching expressive writing to students with learning disabilities: A meta-analysis. *The Elementary School Journal*, 101(3), 251-272. doi: 10.1086/499668
- Gersten, R., Fuchs, L. S., Williams, J. P., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: A review of research. *Review of educational research*, 71(2), 279-320. doi: 10.3102/00346543071002279
- Goran, L. G., & Gage, N. A. (2011). A comparative analysis of language, suspension, and academic performance of students with emotional disturbance and students with learning disabilities. *Education and Treatment of Children*, 34, 469-488. doi: 10.1353/etc.2011.0035
- Greenwood, C. R., Maheady, L., Delquadri, J. (2002). Classwide peer tutoring program. In M.R. Shinn, H.M. Walker, & G. Stoner (Eds.). *Interventions for academic and behavioral problems II: Preventive and remedial approaches* (pp. 611-649). Bethesda, MD: National Association of School Psychologists.

- Gresham, F. M. (2007). Response to intervention and emotional and behavioral disorders: Best practices in assessment and intervention. *Assessment for Effective Intervention*, 32(4), 214-222. doi: 10.1177/15345084070320040301
- Gresham, F. M., Hunter, K. K., Corwin, E. P., & Fischer, A. (2013). Screening, assessment, treatment, and outcome evaluation of behavioral difficulties in an RTI model. *Exceptionality*, 21, 19-33. doi: 10.1080/09362835.2013.750115
- Gresham, F. M., & REACH, P. (2005). Response to intervention: An alternative means of identifying students as emotionally disturbed. *Education and Treatment of Children*, 28 (4), 328-344.
- Gureasko-Moore, S., DuPaul, G. J., & White, G. P. (2006). The effects of self-management in general education classrooms on the organizational skills of adolescents with ADHD. *Behavior Modification*, 30(2), 159-183. doi: 10.1177/0145445503259387
- Hackenberg, T. D. (2009). Token reinforcement: A review and analysis. *Journal of the Experimental Analysis of Behavior*, 91, 257-286. doi: 10.1901/jeab.2009.91-257
- Hanchon, T. A., & Allen, R. A. (2013). Identifying students with emotional disturbance: School psychologists' practices and perceptions. *Psychology in the Schools*, 50(2), 193-208. doi: 10.1002/pits.21668
- Handwerk, M. L., & Marshall, R. M. (1998). Behavior and emotional problems of students with learning disabilities, serious emotional disturbance, or both conditions. *Journal of Learning Disabilities*, 31, 327-338. doi: 10.1177/002221949803100402
- Harris, K. R., Friedlander, B. D., Saddler, B., Frizzelle, R., & Graham, S. (2005). Self-monitoring of attention versus self-monitoring of academic performance: Effects among students with ADHD in the general education classroom. *The Journal of Special Education*, 39(3), 145-156. doi: 10.1177/00224669050390030201
- Harry, B., & Anderson, M. G. (1994). The disproportionate placement of African American males in special education programs: A critique of the process. *Journal of Negro Education*, 63(4), 602-619. doi: 10.2307/2967298
- Hart, K. C., Massetti, G. M., Fabiano, G. A., Pariseau, M. E., & Pelham, W. E. (2011). Impact of group size on classroom on-task behavior and work productivity in children with ADHD. *Journal of Emotional and Behavioral Disorders*, 19(1), 55-64. doi: 10.1177/1063426609353762
- Hastings, F. L., Raymond, G., & McLaughlin, T. F. (1989). Speed counting money: The use of direct instruction to train learning disabled and mentally retarded adolescents to count money efficiently. *B.C. Journal of Special Education*, 13, 137-146.

- Heathfield, L. T., & Clark, E. (2004). Shifting from categories to services: Comprehensive school-based mental health for children with emotional disturbance and social maladjustment. *Psychology in the Schools, 41* (8), 911-920. doi: 10.1002/pits.20047
- Hoagwood, K., & Erwin, H. D. (1997). Effectiveness of school-based mental health services for children: A 10-year research review. *Journal of Child and Family Studies, 6* (4), 435-451. doi: 10.1023/A:1025045412689
- Hoff, K. E., & DuPaul, G. J. (1998). Reducing disruptive behavior in general education classrooms: The use of self-management strategies. *School Psychology Review, 27*, 290-303.
- Hoza, B., Mrug, S., Gerdes, A. C., Bukowski, W. M., Kraemer, H. C., Wigal, T., et al. (2005). What aspects of peer relationships are impaired in children with attention-deficit/hyperactivity disorder? *Journal of Counseling and Clinical Psychology, 73*, 411-423. doi: 10.1037/0022-006X.73.3.411
- Huntington, D. D., & Bender, W. N. (1993). Adolescents with learning disabilities at risk? Emotional well-being, depression, suicide. *Journal of Learning Disabilities, 26*, 159-166. doi: 10.1177/002221949302600303
- Hutchinson, N. L. (1993). Effects of cognitive strategy instruction on algebra problem solving of adolescents with learning disabilities. *Learning Disability Quarterly, 16*, 34-63. doi: 10.2307/1511158
- Idol-Maestas, L. (1985). Getting ready to read: Guided probing for poor comprehenders. *Learning Disability Quarterly, 8*, 243-254. doi: 10.2307/1510587
- Individuals with Disabilities Education Act of 2007 Pub. L. No. 108-446, § 601-602, 118 Stat. 2647.
- Iseman, J. S., & Naglieri, J. A. (2011). A cognitive strategy instruction to improve math calculation for children with ADHD and LD: A randomized controlled study. *Journal of Learning Disabilities, 44*(2), 184-195. doi: 10.1177/0022219410391190
- Jennings, J., Pearson, G., & Harris, M. (2000). Implementing and maintaining school-based mental health services in a large, urban school district. *Journal of School Health, 70* (5), 201-205. doi: 10.1111/j.1746-1561.2000.tb06473.x
- Joseph, L. A., & Eveleigh, E. L. (2011). A review of the effects of self-monitoring on reading performance of students with disabilities. *Journal of Special Education, 45*, 43-43. doi: 10.1177/0022466909349145
- Kamps, D., Kravits, T., Rauch, J., Kamps, J. L., & Chung, N. (2000). A prevention program for students with or at risk for ED: Moderating effects of variation in treatment and

- classroom structure. *Journal of Emotional and Behavioral Disorders*, 8 (3), 141-154. doi: 10.1177/106342660000800302
- Kavale, K. A., & Forness, S. R. (1996). Social skills deficits and learning disabilities: A meta-analysis. *Journal of Learning Disabilities*, 29, 226-237. doi: 10.1177/002221949602900301
- Kavale, K. A., & Mostert, M. P. (2004). Social skills interventions for individuals with learning disabilities. *Learning Disability Quarterly*, 27(1), 31-43. doi: 10.2307/1593630
- Klassen, R. M., & Lynch, S. L. (2007). Self-efficacy from the perspective of adolescents with LD and their specialist teachers. *Journal of Learning Disabilities*, 40, 494-507. doi: 10.1177/00222194070400060201
- Klinger, J. K., Artiles, A. J., & Barletta, L. M. (2006). English language learners who struggle with reading: Language acquisition or LD? *Journal of Learning Disabilities*, 39(2), 108-128. doi: 10.1177/00222194060390020101
- Kortering, L. J. (2009). School completion issues in special education. *Exceptionality*, 17, 1-4. doi: 10.1080/09362830802590060
- Kortering, L. J., & Christenson, S. (2009). Engaging students in school and learning: The real deal for school completion. *Exceptionality*, 17, 5-15. doi: 10.1080/09362830802590102
- Kroesbergen, E. H., & Van Luit, J. E. H. (2003). Mathematics interventions for children with special education needs: A meta-analysis. *Remedial and Special Education*, 24(2), 97-114. doi: 10.1177/07419325030240020501
- Laird, J., & Winton, A. S. (1993). A comparison of self-instructional checking procedures for remediateing mathematical deficits. *Journal of Behavioral Education*, 3, 143-164. doi: 10.1007/BF00947033
- Lane, K. L. (2007). Identifying and supporting students at risk for emotional and behavioral disorders within multi-level models: Data driven approaches to conducting secondary interventions with an academic emphasis. *Education and Treatment of Children*, 30 (4), 135-164. doi: 10.1353/etc.2007.0026
- Lane, K. L., Barton-Arwood, S. M., Nelson, J. R., & Wehby, J. (2008). Academic performance of students with emotional and behavioral disorders served in a self-contained setting. *Journal of Behavioral Education*, 17, 43-62. doi: 10.1007/s10864-007-9050-1
- Lane, K. L., Carter, E. W., Pierson, M. R., & Glaeser, B. C. (2006). Academic, social, and behavioral characteristics of high school students with emotional disturbances or

- learning disabilities. *Journal of Emotional and Behavioral Disorders*, 14, 108-117. doi: 10.1177/10634266060140020101
- Lane, K. L., Rogers, L. A., Parks, R. J., Weisenbach, J. L., Mau, A. C., Merwin, M. T., et al. (2007). Function-based interventions for students who are nonresponsive to primary and secondary prevention efforts: Illustrations at the elementary and middle school levels. *Journal of Emotional and Behavioral Disorders*, 15 (3), 169-183. doi: 10.1177/10634266070150030401
- LeFever, G. B., Villers, M. S., Morrow, A. L., & Vaughn, E. S. (2002). Parental perceptions of adverse educational outcomes among children diagnosed and treated for ADHD. A call for improved school/provider collaboration. *Psychology in the Schools*, 39, 63-71. doi: 10.1002/pits.10000
- Levine, P., Marder, C., & Wagner, M. (2004). *Services and Supports for Secondary School Students with Disabilities. A Special Topic Report from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.
- Lindstrom, J. H., & Sayeski, K. (2013). Identifying best practice in a shifting landscape: Making sense of RTI in the context of SLD identification. *Exceptionality*, 21, 5-18. doi: 10.1080/09362835.2013.750111
- Locke, W. R., & Fuchs, L. S. (1995). Effects of peer-mediated reading instruction on the on-task behavior and social interaction of children with behavior disorders. *Journal of Emotional and Behavioral Disorders*, 3 (2), 92-99. doi: 10.1177/106342669500300204
- Loe, I. M., & Feldman, H. M. (2007). Academic and educational outcomes of children with ADHD. *Journal of Pediatric Psychology*, 32(6), 643-654. doi: 10.1093/jpepsy/jsl054
- Lyon, G. R. (1996). The future of children. *Special education for student with disabilities*, 6(1), 54-76.
- Maag, J. W., & Behrens, J. T. (1989a). Depression and cognitive self-statements of learning disabled and seriously emotionally disturbed adolescents. *The Journal of Special Education*, 23, 17-27. doi: 10.1177/002246698902300103
- Maag, J. W., & Behrens, J. T. (1989b). Epidemiologic data on seriously emotionally disturbed and learning disabled adolescents: Reporting extremem depressive symtomatology. *Behavior Disorders*, 15, 21-27.
- Maag, J.W., & Katsiyannis, A. (2008). The medical model to block eligibility for students with EBD: A response-to-intervention alternative. *Behavioral Disorders*, 33(3), 184-194.

- Maag, J. W., & Reid, R. (2006). Depression among students with learning disabilities: Assessing the risk. *Journal of Learning Disabilities, 39*, 3-10. doi: 10.1177/00222194060390010201
- Maag, J. W., & Swearer, S. M. (2005). Cognitive-behavioral interventions for depression: Review and implications for school personell. *Behavioral Disorders, 30*(3), 259-276.
- Maccini, P., & Hughes, C. A. (1997). Mathematics interventions for adolescens with learning disabilities. *Learning Disabilities Research & Practice, 12*(3), 168-176.
- Maccini, P., Mulcahy, C. A., & Wilson, M. G. (2007). A follow-up of mathematics interventions for secondary students with learning disabilities. *Learning Disabilities Research & Practice, 22*(1), 58-74. doi: 10.1111/j.1540-5826.2007.00231.x
- Martinez, R. S., & Nellis, L. M. (2008). *Transforming school mental health services*. B. Doll & J. A. Cummings (Eds.). Thousand Oaks, CA: Corwin Press.
- Martinussen, R., Tannock, R., & Chaban, P. (2011). Teachers' reported use of instructional and behavior management practices for students with behavior problems: Relationship to role and level of training in ADHD. *Child and Youth Care Forcum, 40*, 193-210. doi: 10.1007/s10566-010-9130-6
- Mathes, M. Y., & Benderm W. N. (1997). The effects of self-monitoring on children with attention-deficit/hyperactivity disorder who are receiving pharmacological inteventions. *Remedial and Special Education, 18*(2), 121-128. doi: 10.1177/074193259701800206
- Mattison, R. E., Hunphrey, F. J., Kales, S. N., Handford, H. A., Finkernbinder, R. L., & Hernit, R. C. (1986). Psychiatric background and diagnoses of children evaluated for special class placement. *Journal of the American Academy of Child Psychiatry, 25*, 514-520. doi: 10.1016/S0002-7138(10)60011-8
- Mautone, J. A., DuPaul, G. J., & Jitendra, A. K. (2005). The effects of computer-assisted instruction on the mathematcis performance and classroom behavior of children with ADHD. *Journal of Attention Disorders, 9*, 301-312. doi: 10.1177/1087054705278832
- Mazzotti, V. L., Wood, C. L., Test, D. W., & Fowler, C. H. (2012). Effects of computer-assisted instruction on students' knowledge of the self-determined learning model of instruction and disruptive behavior. *The Journal of Special Education, 45*(4), 216-226. doi: 10.1177/0022466910362261
- McConaughy, S. H., Kay, P. J., & Fitzgerald, M. (1998). Preventing SED through parent-teacher action research and social skills instruction: First-year outcomes. *Journal of Emotional and Behavioral Disorders, 6* (2), 81-93. doi: 10.1177/106342669800600202

- McConaughy, S. H., Kay, P. J., & Fitzgerald, M. (1999). The achieving, behaving, caring project for preventing ED: Two-year outcomes. *Journal of Emotional and Behavioral Disorders*, 7 (4), 224-239. doi: 10.1177/106342669900700405
- McConaughy, S. H., Mattison, R. E., & Peterson, R. L. (1994). Behavioral/emotional problems of children with serious emotional disturbances and learning disabilities. *School Psychology Review*, 23, 81-98.
- McKinney, J. D., (1989). Longitudinal research on the behavioral characteristics of children with learning disabilities. *Journal of Learning Disabilities*, 22, 141-150. doi: 10.1177/002221948902200302
- McQuillan, K., DuPaul, G. J., Shapiro, E. S., & Cole, C. L. (1996). Classroom performance of students with serious emotional disturbance: A comparative study of evaluation methods for behavior management. *Journal of Emotional and Behavioral Disorders*, 4 (3), 162-170. doi: 10.1177/106342669600400303
- Merrell, K. W., & Walker, H. M. (2004). Deconstructing a definition: Social maladjustment versus emotional disturbance and moving the ED field forward. *Psychology in the Schools*, 41 (8), 899-910. doi: 10.1002/pits.20046
- Miller, M. A. (2005). Using peer tutoring in the classroom: Applications for students with emotional/behavioral disorders. *Beyond Behavior*, 15 (1), 25-30.
- Miranda-Correia, L. (2010). Special education in Portugal: The new law and the ICF-CY. *Procedia Social and Behavioral Sciences*, 9, 1062-1068. doi: 10.1016/j.sbspro.2010.12.286
- Mooney, P., Ryan, J. B., Uhing, B. M., Reid, R., & Epstein, M. H. (2005). A review of self-management interventions targeting academic outcomes for students with emotional and behavioral disorders. *Journal of Behavioral Education*, 14 (3), 203-221. doi: 10.1007/s10864-005-6298-1
- Morrison, G. M., & Cosden, M. A. (1997). Risk, resilience, and adjustment of individuals with learning disabilities. *Learning Disability Quarterly*, 20(1), 43-60. doi: 10.2307/1511092
- Murray, C., Goldstein, D. E., Nourse, S., & Edgar, E. (2000). The postsecondary school attendance and completion rates of high school graduates with learning disabilities. *Learning Disabilities Research & Practice*, 15(3), 119-127. doi: 10.1207/SLDRP1503_1
- Nabors, L. A., & Reynolds, M. W. (2000). Program evaluation activities: Outcomes related to treatment for adolescents receiving school-based mental health services. *Children's Services: Social Policy, Research, and Practice*, 3 (3), 175-189. doi: 10.1207/S15326918CS0303_4

- Naglieri, J. A., & Johnson, D. (2000). Effectiveness of a cognitive strategy intervention in improving arithmetic computation based on the PASS theory. *Journal of Learning Disabilities, 33*(6), 591-597. doi: 10.1177/002221940003300607
- National Longitudinal Transition Study 2. (2003). NLTS2 data tables. Available at: <http://www.nlts2.org>.
- Nelson, J. R., Benner, G. J., Lane, K., & Smith, B. W. (2004). Academic achievement of K-12 students with emotional and behavioral disorders. *Exceptional Children, 71* (1), 59-73.
- Nelson, J. R., Benner, G. J., Neill, S., & Stage, S. A. (2006). Interrelationships among language skills, externalizing behavior, and academic fluency and their impact on the academic skills of students with ED. *Journal of Emotional and Behavioral Disorders, 14* (4), 209-216. doi: 10.1177/10634266060140040401
- Newman, L., Wagner, M., Cameto, R., & Knokey, A. M. (2009). *The Post-High School Outcomes of Youth with Disabilities up to 4 Years After High School. A Report of Findings from the National Longitudinal Transition Study-2 (NLTS2) (NCSE 2009-3017)*. Menlo Park, CA: SRI International. Available at www.nlts2.org/reports/2009_04/nlts2_report_2009_04_complete.pdf.
- No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002).
- Nowacek, E. J., & Mamlin, N. (2007). General education teachers and students with ADHD: What modifications are made? *Preventing School Failure, 51*(3), 28-35. doi: 10.3200/PSFL.51.3.28-35
- Nowicki, E. A. (2003). A meta-analysis of the social competence of children with learning disabilities compared to classmates of low and average to high achievement. *Learning Disabilities Quarterly, 26*, 171-188. doi: 10.2307/1593650
- O'Leary, K. D., Pelham, W. E., Rosenbaum, A., & Price, G. H. (1976). Behavioral treatment of hyperkinetic children: An experimental evaluation of its usefulness. *Clinical Pediatrics, 15*, 510-515. doi: 10.1177/000992287601500603
- Osher, D., & Hanley, T. V. (1996). Implications of the national agenda to improve results for children and youth with or at risk of serious emotional disturbance. *Special Services in the Schools, 10*(2), 7-36. doi: 10.1300/J008v10n02_02
- Ota, K. R., & DuPaul, G. J. (2002). Task engagement and mathematics performance in children with attention deficit hyperactivity disorder: Effects of supplemental computer instruction. *School Psychology Quarterly, 17*, 242-257. doi: 10.1521/scpq.17.3.242.20881

- Owens, J. S., Richerson, L., Beilstein, E. A., Crane, A., Murphy, C. E., & Vancouver, J. B. (2005). School-based mental health programming for children with inattentive and disruptive behavior problems: First-year treatment outcome. *Journal of Attention Disorders, 9* (1), 261-274. doi: 10.1177/1087054705279299
- Pariseau, M. E., Fabiano, G. A., Massetti, G. M., Hart, K. C., & Pelham, W. E. (2010). Extended time on academic assignments: Does increased time lead to improved performance for children with Attention-Deficity/Hyperactivity Disorder? *School Psychology Quarterly, 25*(4), 236-248. doi: 10.1037/a0022045
- Paternite, C. E., Loney, J., Salisbury, H., & Whaley, M. (1999). Childhood inattention-overactivity, aggression, and stimulant medication history as predictors of young adult outcomes. *Journal of Child and Adolescent Psychopharmacology, 9*, 169-184. doi: 10.1089/cap.1999.9.169
- Patton, J. M. (1998). The disproportionate representation of African Americans in special education: Looking behind the curtain for understanding and solutions. *The Journal of Special Education, 32*(1), 25-31. doi: 10.1177/002246699803200104
- Pelham, W. E., Wheeler, T., & Chronis, A. (1998). Empirically supported psychosocial treatments for attention deficit hyperactivity disorder. *Journal of Clinical Child Psychology, 27*(2), 190-205. doi: 10.1207/s15374424jccp2702_6
- Pfeiffer, S. I., & Reddy, L. A. (1998). School-based mental health programs in the United States: Present status and a blueprint for the future. *The School Psychology Review, 27* (1), 84-96.
- Powell, J. J. W. (2010). Change in disability classification: Redrawing categorical boundaries in special education in the United States and Germany, 1920-2005. *Comparative Sociology, 9*, 241-267.
- Raggi, V. L., & Chronis, A. M. (2006). Interventions to address the academic impairment of children and adolescents with ADHD. *Clinical Child and Family Psychology Review, 9*, 85-111. doi: 10.1007/s10567-006-0006-0
- Rathvon, N. (2008). *Effective school interventions: Evidence-based strategies for improving student outcomes, second edition*. New York, NY: The Guilford Press.
- Reddy, L. A. (2001). Serious emotional disturbance in children and adolescents: Current status and future directions. *Behavior Therapy, 32*, 667-691. doi: 10.1016/S0005-7894(01)80015-0
- Reddy, L. A., Newman, E., De Thomas, C. A., & Chun, V. (2009). Effectiveness of school-based prevention and intervention programs for children and adolescents with emotional disturbance: A meta-analysis. *Journal of School Psychology, 47*, 77-99. doi: 10.1016/j.jsp.2008.11.001

- Reid, R., Gonzalez, J. E., Nordness, P. D., Trout, A., & Epstein, M. H. (2004). A meta-analysis of the academic status of students with emotional/behavioral disturbance. *The Journal of Special Education, 38* (3), 130-143. doi: 10.1177/00224669040380030101
- Reid, R., Maag, J. W., Vasa, S. F., & White, G. (1994). Who are the children with ADHD: A school-based survey. *Journal of Special Education, 28*, 117-137. doi: 10.1177/002246699402800201
- Roberts, M. C., Jacobs, A. K., Puddy, R. W., Nyre, J. E., & Vernberg, E. M. (2003). Treating children with serious emotional disturbances in schools and community: The intensive mental health program. *Professional Psychology: Research and Practice, 34* (5), 519-526. doi: 10.1037/0735-7028.34.5.519
- Robinson, K. E., & Rapport, L. J. (2002). Outcomes of a school-based mental health program for youth with serious emotional disorders. *Psychology in the Schools, 39* (6), 661-675. doi: 10.1002/pits.10064
- Rones, M., & Hoagwood, K. (2000). School-based mental health services: A research review. *Clinical Child and Family Psychology Review, 3* (4), 223-241. doi: 10.1023/A:1026425104386
- Sanches-Ferreira, M., Simeonsson, R. J., Silveira-Maia, M, Alves, S., Tavares, A., & Pinheiro, S. (2012). Portugal's special education law: Implementing the International Classification of Functioning, Disability, and Health in policy and practice. *Disability and Rehabilitation, 35*, 868-873. doi: 10.3109/09638288.2012.7088/6
- Scarlato, M. C., & Burr, W. A. (2002). Teaching fractions to middle school students. *Journal of Direct Instruction, 2*(1), 23-38.
- Schnoes, C., Reid, R., Wagner, M., & Marder, C. (2006). ADHD among students receiving special education services: A national survey. *Exceptional Children, 72*, 483-496.
- Schultz, B. K., Storer, J., Watabe, Y., Sadler, J., & Evans, S. W. (2011). School-based treatment of attention-deficit/hyperactivity disorder. *Psychology in the Schools, 48*(3), 254-262. doi: 10.1002/pits
- Shessel, I., & Reiff, H. B. (1999). Experiences of adults with learning disabilities: Positive and negative impacts and outcomes. *Learning Disability Quarterly, 22*(4), 305-316. doi: 10.2307/1511264
- Shimabukuro, S. M., Prater, M. A., Jenkins, A., & Edelen-Smith, P. (1999). The effects of self-monitoring of academic performance on students with learning disabilities and ADD/ADHD. *Education and Treatment of Children, 22*(4), 397-414.

- Simeonsson, R. J. (2009). ICF-CY: A universal tool for documentation of disability. *Journal of Policy and Practice in Intellectual Disabilities*, 6(2), 70-72. doi: 10.1111/j.1741-1130.2009.00215.x
- Simeonsson, R. J., & Lee, A. (2013). The ICF-CY: A universal taxonomy for psychological assessment. In D.H. Saklofske, C.R. Reynolds, & V. Schwane (Eds.), *The oxford handbook of child psychological assessment* (202-221). New York, NY: Oxford University Press.
- Simmons, D. C., Fuchs, L. S., Fuchs, D., Mathes, P., & Hodge, J. P. (1995). Effects of explicit teaching and peer tutoring on the reading achievement of learning-disabled and low-performing students in the classroom. *The Elementary School Journal*, 95, 387-408. doi: 10.1086/461851
- Sinclair, M. F., Christenson, S. L., & Thurlow, M. L. (2005). Promoting school completion of urban secondary youth with emotional or behavioral disabilities. *Exceptional Children*, 71 (4), 465-482.
- Slade, E. P. (2002). Effects of school-based mental health programs on mental health service use by adolescents at school and in the community. *Mental Health Services Research*, 4 (3), 151-166. doi: 10.1023/A:1019711113312
- Sprague, J., & Walker, H. (2000). Early identification and intervention for youth with antisocial and violent behavior. *Exceptional Children*, 66 (3), 367-379.
- Stahr, B., Cushing, D., Lane, K., & Fox, J. (2006). Efficacy of a function-based intervention in decreasing off-task behavior exhibited by a students with ADHD. *Journal of Positive Behavior Interventions*, 8(4), 201-211. doi: 10.1177/10983007060080040301
- Stanley, P. D., Dai, Y., Nolan, R. F. (1997). Differences in depression and self-esteem reported by learning disabled and behavior disordered middle school students. *Journal of Adolescence*, 20, 219-222. doi: 10.1006/jado.1996.0079
- Stormont, M. (2001). Social outcomes of children with AD/HD: Contributing factors and implications for practice. *Psychology in the Schools*, 38, 521-531. doi: 10.1002/pits.1040
- Stormont, M. A., (2008). Increase academic success for children with ADHD using sticky notes and highlighters. *Intervention in School and Clinic*, 43, 305-308. doi: 10.1177/1053451207311768
- Strong, A. C., Wehby, J. H., Falk, K. B., & Lane, K. L. (2004). The impact of a structured reading curriculum and repeated reading on the performance on junior high students with emotional and behavioral disorders. *School Psychology Review*, 33 (4), 561-581.

- Sutherland, K. S., & Snyder, A. (2007). Effects of reciprocal peer tutoring and self-graphing on reading fluency and classroom behavior of middle school students with emotional or behavioral disorders. *Journal of Emotional and Behavioral Disorders*, 15 (2), 103-118. doi: 10.1177/10634266070150020101
- Sutherland, K. S., Alder, N., & Gunter, P. L. (2003). The effect of varying rates of opportunities to respond to academic requests on the classroom behavior of students with ED. *Journal of Emotional and Behavioral Disorders*, 11 (4), 239-248. doi: 10.1177/10634266030110040501
- Sutherland, K. S., Wehby, J. H., & Copeland, S. R. (2000). Effect of varying rates of behavior-specific praise on the on-task behavior of students with ED. *Journal of Emotional and Behavioral Disorders*, 8 (1), 2-8, 26. doi: 10.1177/106342660000800101
- Swanson, H. L. (1999a). Instructional components that predict treatment outcomes for students with learning disabilities: Support for a combined strategy and direct instruction model. *Learning Disabilities Research & Practice*, 14(3), 129-140. doi: 10.1207/sldrp1403_1
- Swanson, H. L. (1999b). Reading research for students with LD: A meta-analysis of intervention outcomes. *Journal of Learning Disabilities*, 32, 504-532. doi: 10.1177/002221949903200605
- Swanson, H. L., & Deshler, D. (2003). Instructing adolescents with learning disabilities: Converting a meta-analysis to practice. *Journal of Learning Disabilities*, 36(2), 124-135. doi: 10.1177/002221940303600205
- Swanson, H. L., & Hoskyn, M. (2001). A meta-analysis of intervention research for adolescent students with learning disabilities. *Learning Disabilities Research & Practice*, 16, 109-119. doi: 10.1111/0938-8982.00012
- Taft, R. J., & Mason, L. H. (2011). Examining effects of writing interventions: Highlighting results for students with primary disabilities other than learning disabilities. *Remedial and Special Education*, 32(5), 359-370. doi: 10.1177/0741932510362242
- Tannock, R. (2013). Rethinking ADHD and LD in DSM-5: Proposed changes in diagnostic criteria. *Journal of Learning Disabilities*, 46(1), 5-25. doi: 10.1177/0022219412464341
- Trout, A. L., Nordness, P. D., Pierce, C. D., & Epstein, M. H. (2003). Research on the academic status of children with emotional and behavioral disorders: A review of the literature from 1961 to 2000. *Journal of Emotional and Behavioral Disorders*, 11 (4), 198-210. doi: 10.1177/10634266030110040201

- U.S. Department of Education, National Center for Education Statistics (2011). *Digest of Education Statistics, 2010* (NCES 2011-015), Chapter 2.
- Valas, H. (1999). Students with learning disabilities and low-achieving students: Peer acceptance, loneliness, self-esteem, and depression. *Social Psychology of Education*, 3, 173-192. doi: 10.1023/A:1009626828789
- Vernberg, E. M., Roberts, M. C., Randall, C. J., Biggs, B. K., Nyre, J. E., & Jacobs, A. K. (2006). Intensive mental health services for children with serious emotional disturbances through a school-based, community-oriented program. *Clinical Child Psychology and Psychiatry*, 11 (3), 417-430. doi: 10.1177/1359104506064986
- Wagner, M., & Cameto, R. (2004). *NLTS2 Data Brief: The Characteristics, Experiences, and Outcomes of Youth with Emotional Disturbances. A Report from the National Longitudinal Transition Study-2*. (2004, August). Available at www.ncset.org/publications/viewdesc.asp?id=1687.
- Wagner, M., Cameto, R., & Newman, L. (2003). *Youth with disabilities: A changing population. A report of findings from the National Longitudinal Transition Study (NLTS) and the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.
- Wagner, M., & Davis, M. (2006). How are we preparing students with emotional disturbances for transition to young adulthood? Findings from the National Longitudinal Transition Study - 2. *Journal of Emotional and Behavioral Disorders*, 14 (2), 86-98. doi: 10.1177/10634266060140020501
- Wagner, M., Friend, M., Bursuck, W. D., Kustash, K., Duchnowski, A. J., Sumi, W. C., et al. (2006). Educating students with emotional disturbances: A national perspective on school programs and services. *Journal of Emotional and Behavioral Disorders*, 14 (1), 12-30. doi: 10.1177/10634266060140010201
- Wagner, M., Kutash, K., Duchnowski, A. J., & Epstein, M. H. (2005). The special education elementary longitudinal study and the national longitudinal transition study: Study designs and implications for children and youth with emotional disturbance. *Journal of Emotional and Behavioral Disorders*, 13 (1), 25-41. doi: 10.1177/10634266050130010301
- Wagner, M., Kutash, K., Duchnowski, A. J., Epstein, M. H., & Sumi, W. C. (2005). The children and youth we serve: A national picture of the characteristics of students with emotional disturbances receiving special education. *Journal of Emotional and Behavioral Disorders*, 13 (2), 79-96. doi: 10.1177/10634266050130020201
- Wagner, M., Marder, C., Levine, P., Cameto, R., Cadwallader, T., & Blackorby, J. (with Cardoso, D. & Newman, L.). (2003). *The Individual and Household Characteristics of Youth with Disabilities. A Report from the National Longitudinal Transition Study-*

- 2 (NLTS2). Menlo Park, CA: SRI International. Available at www.nlts2.org/reports/2003_08/nlts2_report_2003_08_complete.pdf.
- Wagner, M., Newman, L., Cameto, R., Levine, P., & Marder, C. (2007). *Perceptions and Expectations of Youth With Disabilities. A Special Topic Report of Findings from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International. Available at www.nlts2.org/reports/2007_08/nlts2_report_2007_08_complete.pdf.
- Weist, M. D., Patrick, M. C., Hastings, E., Ghuman, H., & Han, Y. L. (1999). Psychosocial functioning of youth receiving mental health services in the schools versus community mental health centers. *Community Mental Health Journal*, 35 (1), 69-81. doi: 10.1023/A:1018700126364
- Wodrich, D. L., & Spencer, M. L. S. (2007). The other health impairment category and health-based classroom accommodations: School psychologists' perceptions and practices. *Journal of Applied School Psychology*, 24, 109-125. doi: 10.1300/J370v24n01_06
- World Health Organization (2007). *International Classification of Functionality, Disability, and Health for Children and Youth (ICF-CY)*. Geneva: Author.
- Wu, S., & Gau S. S. (2013). Correlates for academic performance and school functioning among youths with and without persistent attention-deficit/hyperactivity disorder. *Research in Developmental Disabilities*, 34, 505-515. doi: 10.1016/j.ridd.2012.09.004
- Yu, J., Huang, T., & Newman, L. (2008). *Facts from NLTS2: Substance Use Among Young Adults with Disabilities*. Menlo Park, CA: SRI International. Available at www.nlts2.org/fact_sheets/nlts2_fact_sheet_2008_03.pdf.
- Zentall, S. S., & Ferkis, M. A. (1993). Mathematical problems solving for youth with ADHD, with and without learning disabilities. *Learning Disability Quarterly*, 16(1), 6-18. doi: 10.2307/1511156
- Zhang, D., & Katsiyannis, A. (2002). Minority representation in special education: A persistent challenge. *Remedial and Special Education*, 23(3), 180-187. doi: 10.1177/07419325020230030601